HP Operations Analytics

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HP Operations Analytics Help

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Chapter 1: Getting Started with HP Operations Analytics

About

What can OpsA do for me?

Welcome to Operations Analytics, an analysis tool that provides a unified approach to proactively manage and solve simple and complex IT operations problems.

In today's complex data center environments, the source of a problem is not always easy to detect using traditional management and troubleshooting tools that look only for pre-determined solutions to known potential problems. For example, many management and troubleshooting tools are designed to provide analytics for a specific problem context, such as root cause isolation, outlier detection, and service level agreement violation. They provide these services by using a specific data set and analytics technique.

With Operations Analytics you generate insights from the data in your IT environment that you choose to collect. And because identifying the most useful analytics to derive from the data generally depends on the problem context, with Operations Analytics you, the user, provide each data request in the form of a search query.

Operations Analytics enables you to use simple search queries using the Phrased Query Language (PQL) to view metric, topology, event, and log file information related to the context you specify. Operations Analytics also enables you to use its Analytics Query Language (AQL) for more precise searches; for example, when you know the exact log file message or combination of analytics required to troubleshoot a problem.

When entering a search query, Operations Analytics offers suggestions as you type. It then uses your query to analyze the information available and displays the most important and related metrics.

Operations Analytics processes data according to your search query. These results assist you with the following kinds of tasks:

- Identify and analyze the pattern of problems in your IT environment.
- Identify the cause of resource or application usage problems.
- Troubleshoot server and network performance problems.
- Identify configuration or inventory changes.

What are OpsA's main features?

- **Dashboards.** OpsA allows you to create your own dashboard or to use one of the out-of-the-box dashboards. Dashboards are collections of Query Panes, which display specific metrics in your choice of visual representations. The dashboards can also display the log viewer. For more details, see "Dashboards and Query Panes" on page 11.
- **Search.** To use Operations Analytics, you must first define the context of the problem or area for which you want information. To do so, use the Search Query field. Operations Analytics then uses the search query you specify to determine the related metrics, topology, inventory, event, and log file information to display. For more details, see "Search Tool" on page 24.
- **Play Back History.** Play back your search query results using the Playback feature. For more details, see "Play Back History" on page 37.
- **Predictive Analytics.** OpsA's predictive analytics enables you to generate a prediction line for one or more metrics based on past behavior and seasonal trends. For more details, see "Predictive Analytics" on page 44.
- **Log Analytics.** Log Analytics is a forensic tool that helps you locate the most significant log messages in a given time range. For more details, see "Log Analytics" on page 39.
- **Topology Management.** The Topology Manager enables you define a logical hierarchy for monitored hosts. You can group hosts together based on their function, their location, or any other grouping that is meaningful to you when organizing your services. For more details, see "Topology Manager" on page 53.
- **User Management.** OpsA allows you to create and manage user accounts. For more details, see "Manage Users and Tenants" on page 122.
- **Alerts.** You can configure OpsA to send different types of alerts based on criteria you define. For details, see "Alerts" on page 46.

Tasks

How do I start using OpsA?

We recommend starting with one of the following tasks:

- Use the OAEnvironmentOverview dashboard to help determine, at a glance, problem areas to investigate more closely in your IT environment.

  Click Operations Analytics to navigate to the **OAEnvironmentOverview** dashboard. See "Dashboards and Query Panes" on page 11 for more information.

- Enter a search query that defines the context of the problem you are trying to solve.

  For example, you might query for CPU utilization information for a specific host name or for memory utilization for all database instances for a specified application.

  As you type, Operations Analytics provides a list of suggestions to help define the context of the problem you are trying to get information about. See "Search Tool" on page 24 for more information.

- Select an existing dashboard from the **Dashboards** menu.

- Create a new dashboard by selecting **New** from the **Dashboards** menu.

User Interface

How does the Operations Analytics console work?

1 Home Page

The Operations Analytics logo opens the OAEnvironmentOverview dashboard. This dashboard provides an overview of the following information for the hosts in your IT environment:

- Top five CPU utilization (cpu_util)
- Top five disk utilization (disk_io_rate)
- Top five memory utilization (mem_util)
- Top five network utilization (net_packet_rate)

Use this dashboard to help determine, at a glance, problem areas to investigate more closely in your network environment.

Note the following:

- Operations Analytics displays the LogsOverview dashboard when you initially log on to Operations Analytics.
- Each subsequent time you log on, Operations Analytics displays the last dashboard you accessed. In the **Dashboard** menu a check mark indicates the dashboard in use.
- Shared dashboards that have been provided by other members of your user community are appended with the name of the user who provided the dashboard.

To access the home page, click the Operations Analytics logo to return to the OAEnvironmentOverview dashboard.

See "Out-of-the-Box Dashboards Provided by Operations Analytics" on page 12 for more information.

2 Search Query

Defines the context for the data you want to examine.

Operations Analytics gathers and analyzes the data based on the search query you enter.

To perform a search, enter the string to search for. As you type, a list of suggestions are displayed to enhance the search query. This list is dynamically generated based on your data.

3 Time Range

Specifies the time frame within which Operations Analytics should obtain the data to display.

Use the Time Range menu to specify the time in hours, days, or months.

Note: The time range is historical. It spans the selected time range ending at the current time.

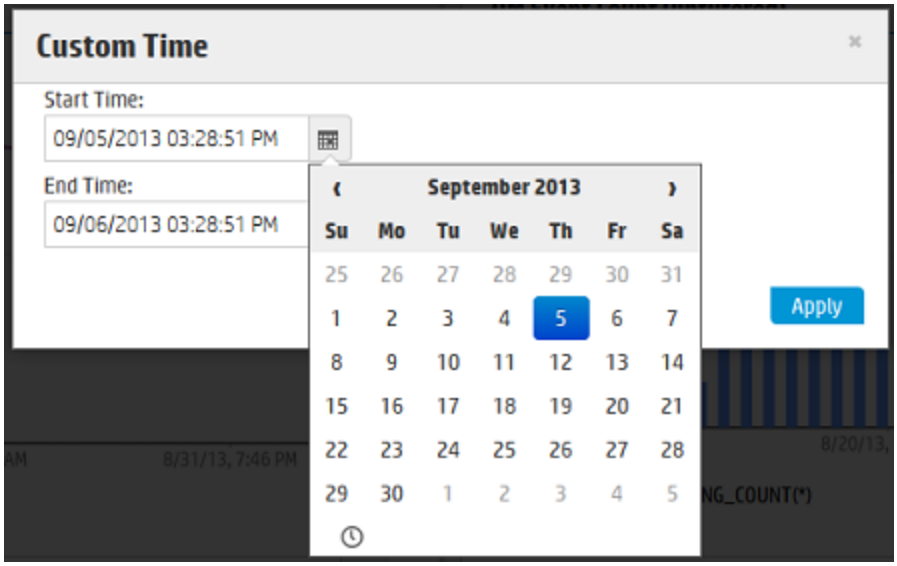
Use the **Custom Time** option when you want to specify a start and end date using the Operations Analytics calendar.

By default, Operations Analytics uses a time range of 1 Hour.

To use the time range feature:

1. In the Time Range menu, click .
2. Select the time in hours, days, or months.

3. To specify a start and end date using the Operations Analytics calendar, select **Custom Time**.
4. Click the calendar icon to display the calendar for either **Start Time** or **End Time** as shown in the following example.



5. After you have completed selecting your Start Time and End Time Dates, click **Apply**.

See "Filter Search Query Results " on page 35 for more information.

4 Time Line

Enables you to filter the time segment for which the data is displayed.

This feature is useful when you want to fine tune the Time Range selected.

To filter your analysis by time segment, slide each end of the time line to the beginning and end point of the time you want to use:

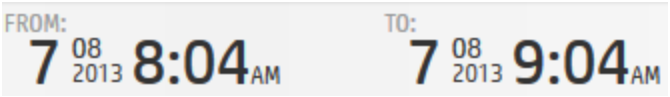
See "Filter Search Query Results " on page 35 for more information.

5 Time Segment

Displays the time segment you selected from the Time Line.

See "Filter Search Query Results " on page 35 for more information.

After you slide each end of the time line to the beginning and end point of the time you want to use, the From and To time changes to match the latest selection.



6 New Query Pane

Enables you to add one or more query panes using one of the following:

- Analytics Query Language (AQL) query
- AQL function
- AQL expression

  See the AQL Developer's Guide for Operations Analytics for more information.

To add a new query, see "Dashboards and Query Panes" on page 11.

7 Log In Information

Displays your user name. See "About User Accounts" on page 122 for more information.

Enables you to do the following:

- Access user settings
  - Change your password. See "Change Your User Account Password" on page 126 for more information.
  - Log out.

To log out, click your user account name and select **Logout**.

8 HP ArcSight Logger

To launch HP ArcSight Logger, click and select the HP ArcSight Logger IP address or host name to which you want to connect.

9 Settings

Access the following settings ().

- *Operations Analytics administrators only*. **User Management**. For details, see "Manage Users and Tenants" on page 122
- **Topology Management**. For details, see "Topology Manager" on page 53

10 Help, Reference Pages and About

Access the following information for Operations Analytics:

- Help
- Reference pages - descriptions of command line interface commands.
- License, database, and version information

11 Dashboards

Lists the following saved dashboards:

- Provided by Operations Analytics.
- Shared by the users in your user community (tenants).
- Saved by the current user.

You can select a dashboard from this list rather than using the search query to create your own.

For more details, see "Dashboards and Query Panes" on page 11.

12 Playback

Replay Operations Analytics results.

This option is useful to help you identify when a problem began to occur.

For more details, see "Play Back History" on page 37

13 Dashboard Area

An Operations Analytics dashboard is the graphical user interface for troubleshooting your IT operations problems.

For more details, see "Dashboards and Query Panes" on page 11.

Note: When you first access Operations Analytics, it displays the LogsOverview dashboard. Each subsequent time you log on, Operations Analytics displays the last saved dashboard you accessed. In the **Dashboards** menu a check mark indicates the dashboard in use.

Chapter 2: Dashboards and Query Panes

A dashboard is the graphical user interface for troubleshooting your IT operations problems.

Dashboards are collections of Query Panes defined in a specific layout. Dashboards allow you to customize your layout and can be shared with other users.

To access

- Enter a new search query in the Search Query field.
- Select an existing dashboard from the **Dashboards** menu.
- Create a new dashboard by selecting **New** from the **Dashboards** menu.

Learn About

Overview

A dashboard is the graphical user interface for troubleshooting your IT operations problems.

Dashboards are collections of Query Panes defined in a specific layout. Dashboards allow you to customize your user interface and save the settings.

The first time you access Operations Analytics, it displays the **LogsOverview** dashboard. This dashboard lists all of the log messages from the log files that have been configured to be collected in your IT environment. Use this dashboard as a starting point to look for errors that might have occurred.

Out-of-the-Box Dashboards Provided by Operations Analytics

Name	Description
Logs Apache	**Note:** This dashboard is available only if you have installed the *Apache HTTP Server Access File* and *Apache HTTP Server Error File* SmartConnectors provided by HP ArcSight Logger. SmartConnectors are not included as part of Operations Analytics. Displays the following information. Information for access log and error log are displayed next to each other: • Log messages count over time • Log messages count by severity • Top 10 hosts with failure messages • Total errors per host • Log messages. **Note:** You can change the sort order of the message displayed in the log messages panes by modifying the AQL query. For details, see the AQL Developer Guide .
BPM Applications Overview	**Note:** See "Configuring an HP Business Process Monitor Collection" in the HP Operations Analytics Configuration Guide for the configuration steps required to display this dashboard information. Use the BPM Applications Overview to view the following: • Application Availability Over Time The heat map value in this dashboard is the number of failed transactions. • Application Performance Over Time • Application Layer Performance Over Time • Top 10 Transactions Performance • Top 10 Locations Performance

Name	Description
Logs Linux	**Note:** This dashboard is available only if you have installed the *Linux Audit File* and *Linux Syslog File* SmartConnectors provided by HP ArcSight Logger. SmartConnectors are not included as part of Operations Analytics. Displays the following information. Information is calculated per host. • Log messages count over time • Log messages count by severity • Top 10 hosts with failure messages • Top 10 log message categories • Log messages **Note:** You can change the sort order of the message displayed in the log messages panes by modifying the AQL query. For details, see the AQL Developer Guide .
Logs Search	**Note:** See "Installing and Configuring HP ArcSight Logger" in the HP Operations Analytics Installation Guide for the configuration steps required to display this dashboard information. Displayed by default when you initially log on to Operations Analytics. This dashboard provides an overview of the following information for the log messages in your IT environment: • Log Messages - All • Log Messages - Syslog Only **Note:** You can change the sort order of the message displayed in the log messages panes by modifying the AQL query. For details, see the AQL Developer Guide .

Name	Description
NNMi Network SPI	Displays the following information: • Top 10 Network Interfaces with Utilization In • Top 10 Network Interfaces with Utilization Out • Top 10 network interfaces based on highest error percentages • Top 10 network interfaces based on highest discard percentages • Top 10 network interfaces based on highest in and out throughput • Top 10 network devices based on highest CPU utilization • Top 10 network devices based on highest memory utilization • Top 10 unavailable nodes • Top 10 network devices based on highest SNMP response times
OA Environment Overview	**Note:** See "Configuring an HP Operations Agent Collection" in the HP Operations Analytics Configuration Guide for the configuration steps required to display this dashboard information. This dashboard provides an overview of the following information for the hosts in your IT environment: • Top 10 CPU utilization (cpu_util) • Top 10 disk utilization (disk_io_rate) • Top 10 memory utilization (mem_util) • Top 10 network utilization (net_packet_rate) Use this dashboard to help determine, at a glance, problem areas to investigate more closely in your network environment. To return to this dashboard, click Operations Analytics.

Name	Description
OM Events	**Note:** See "Configuring an HP Operations Manager (HPOM) Events Collection" in the HP Operations Analytics Configuration Guide for the configuration steps required to display this dashboard information. Use this dashboard to view the following information: • Event Count Over Time • Top 10 Hosts with Event Count Over Time • Event Count by Host - Current Week • Event Count by Host - Previous Week • Event Count by Severity - Current Week • Event Count by Severity - Previous Week • Table of the first 500 OM events
OMi Events	**Note:** See "Configuring an HP Operations Manager i (OMi) Events Collection" in the HP Operations Analytics Configuration Guide for the configuration steps required to display this dashboard information. Use this dashboard to view the following information: • Total count of the OMi events over time • Percentage of OMi events by host • Total count of OMi events by State • Top hosts that have highest number of OMi events • Percentage of OMi events by application • Event count by the host • Event count by host from the previous week • Event count by severity • Event count by severity from the previous week • Table of the first 500 OMi events

Name	Description
Opsa Health	**Note:** See "Checking Operations Analytics System Health" in the HP Operations Analytics Configuration Guide for the configuration steps required to display this dashboard information. Displays the metrics, topology, and log information available for the following Operations Analytics servers and appliances: • Operations Analytics Collector Appliance • Operations Analytics Server Appliance • List of configured collections that OpsA is collecting data for. This dashboard provides current details about Operations Analytics system health. See "Check the Health of Operations Analytics" on page 133 for more information.
SiteScope Environment Overview	Displays the following information monitored by SiteScope: • Top CPU Utilization • Top Disk Utilization • Top Memory Utilization • Top 10 Hosts with Ping Roundtrip Time • Top 10 Hosts with URL Content Roundtrip Time • Top 10 Hosts with JMX Physical Memory
OpsA Meta Info	Displays the following information for the collections in your IT environment: • Collections and any tags for each collection • Columns (metrics) per collection and tag names per column • Columns defined as keys. See "How to View Collection Information" on page 64 for more information.

Name	Description
Logs Windows	**Note:** This dashboard is available only if you have installed the *Microsoft Windows Event Log - Local* SmartConnector provided by HP ArcSight Logger. SmartConnectors are not included as part of Operations Analytics. Displays the following information. Information is calculated per host. • Log messages count over time • Log messages count by severity • Top 10 log message categories • Top 10 hosts with failure messages • Log messages **Note:** You can change the sort order of the message displayed in the log messages panes by modifying the AQL query. For details, see the AQL Developer Guide .
OpsA Alerts	Displays all instances of triggered alerts going back three months by default. You can drill down to open additional dashboards showing more details about an alert instance or time period surrounding an alert by clicking the time period or alert name of an alert instance.

Tasks

How to Save a Dashboard

Dashboards are automatically saved when you add/remove Query Panes or modify the dashboard layout.

To copy a dashboard and save it under a new name, see the procedure for copying a dashboard below.

Tip: If you want to experiment with different dashboard layouts, save a copy of the original layout under a different name. Otherwise, OpsA will overwrite the original dashboards as it automatically saves any changes you make.

How to Copy a Dashboard

1. Navigate to the **Dashboard** menu.
2. Click **Manage**.
3. Click the check box ☑ for the dashboard you want to copy.
4. Click **Copy**.
5. In the **Specify a new name** dialog, enter the name of the copied dashboard.
6. Click **OK**.

   The copied dashboard appears in the **Dashboards** menu.

How to Duplicate a Pane

You can duplicate any pane to a dashboard of your choice.

1. From the desired pane, click the **Duplicate pane to dashboard**  button.
2. Select the target dashboard from the drop-down list. You can only duplicate panes to editable dashboards.
3. If you duplicated the dashboard to the original dashboard it was in, you must refresh your browser to view the changes..

How to Delete a Dashboard

1. Navigate to the **Dashboard** menu.
2. Click **Manage**.
3. Click the check box ☑ for each dashboard you want to delete.
4. Click **Delete**.
5. Click **OK**.

   The dashboard name is removed from the **Dashboards** menu.

How to Share a Dashboard

1. Navigate to the **Dashboards** menu.

2. Click **Manage**.
3. Click the check box ☑ for each dashboard you want to share.
4. Click **Share**.

   Each dashboard you select is available to all users in the same tenant.

   Note: Shared dashboards that have been provided by other members of your user community are appended with the name of the user who provided the dashboard.

How to Stop Sharing a Dashboard

1. Navigate to the **Dashboards** menu.
2. Click **Manage**.
3. Click the check box ☑ for each dashboard you want to unshare.
4. Click **Unshare**.

   Note: Each dashboard you select is removed from the dashboard menu of other users in your user community (tenant).

How to Add or Edit a Query Pane

1. Click +.
2. Navigate to the **Query** tab.
3. Do one of the following:
   - In the **(NEW PANE)** attribute, enter the AQL query, AQL function name, or AQL expression for the new query pane.

     OR

   - Select an AQL function.

     Enter values for any of the AQL function arguments that apply.

     Note the following:

     - Your Operations Analytics administrator can provide descriptions for the arguments required for each AQL Function provided. See "Add / Edit Query Pane - Query Tab" on

page 23 for information about how to view these descriptions.

- If descriptions are not provided, you can also view the collection information configured for your IT environment. This collection information might also assist you in providing values for the arguments required.

  Click **Show Tags** to view a new query pane that displays the collections (property group uid), tags (tag name), and columns (property uid) available. Click **Show Properties** to view a new query pane that displays the collections (property group uid), columns (property uid), and whether the column contains **metric**[1] or **attribute**[2] values.

  Also see "How to View Collection Information" on page 64 for more information about how to view the meta data stored for your collections.

Click here for a brief description of the possible AQL function argument types. See the AQL Developer Guide for more information.

Argument Type	Description
analytic	Specifies an analytic function that can be applied to overall aggregate analytic functions, moving aggregate analytic functions, or raw metrics. These analytic functions include: topN, bottomN, inverse_pctile, pctile, outlier, or rank. See the AQL Developer Guide for more information.
collection	Specifies the name of the collection for which Operations Analytics should return search results.
custom	Indicates that Operations Analytics cannot identify the argument type. Check the description for the AQL function that appears in the Query tab when adding or editing a query pane. Also, check with your Operations Analytics administrator for assistance with providing values for these arguments.
entity	Specifies the type of entity attribute on which you want to filter; for example, host_name.
filter	Specifies the filter value to use in the `where` clause of the AQL function. For example, when used with host name, you might enter the following filter value to return data for only the servers in the co.usa.enterprise. com domain: `\"*\.co.usa.enterprise.com"`.
grouping	Specifies an argument required for the group by clause.

[1]Typically a measurement stored in a collection. For example, CPU utilization.
[2]A descriptor stored in a collection for an entity, such as host_name.

Argument Type	Description
function	Specify the overall aggregate or moving aggregate analytic function you want Operations Analytics to use. See the AQL Developer Guide for more information.
metric	Either of the following: ◦ Name of the metric column. ◦ Tag that represents the metric column.
ordering	Specifies an argument required for the `order by` clause.

4. *Optional*. Use the **Visualization** tab to change the visualization that is displayed.
   a. Navigate to the **Visualizations** tab.
   b. Navigate to the Visualizations options:

   c. Select the visualization you want to use.
   d. Navigate to another tab or click **OK**.
   e.

> **Note:** If you select a visualization that is not valid for the data displayed, Operations Analytics displays the default visualization for the AQL query.

   See "Working with Query Panes" on page 27 for more information about visualizations.

5. Use the **Parameters** tab to provide the parameter values, if any, to the selected AQL function.

> **Note:** Any parameter value you provide overrides the associated value selected using another method in the Operations Analytics console. For example, if you specify a time interval using the $interval parameter, Operations Analytics uses the value for $interval rather than the time line segment selected. See "Filter Search Query Results " on page 35 for more information about time line segments.

   a. Navigate to the **Parameters** tab.
   b. Provide the parameter values you want to use.

> **Tip:** Mouse over a parameter to view its description.

To restore the parameter values to their original default values, click **Defaults**.

c. Navigate to another tab or click **Save** to save your changes.

How to Resize a Query Pane.

Navigate to the query pane you want to change. Click the Resize button in the upper right corner of the query pane.

How to Delete a Query Pane from the Dashboard

Click **x** in the upper right corner of the pane to close the query pane and remove it from your dashboard.

How to Modify the Scale of Data Displayed in a Pane

To modify the scale that data is displayed (for example, to display kb instead of bytes) see "Modifying Unit Scaling on Collected Data" in the HP Operations Analytics Configuration Guide .

User Interface

Dashboard Menu

Item	Description
Dashboard Name List	Operations Analytics lists all of the dashboards available for your use. These include: • Dashboards created by the current user. • Dashboards shared by other users in the same user community (tenant).
New	Creates a new dashboard.
Save As	If you are in an unsaved dashboard as a result of a search, Save As saves the search results as a dashboard. If you are in a saved dashboard, Save As creates a copy with a new name.
Manage	Enables you to copy, share, unshare, or delete a dashboard that you no longer need from the **Dashboards** menu. **Note:** You can delete only dashboards that you created.

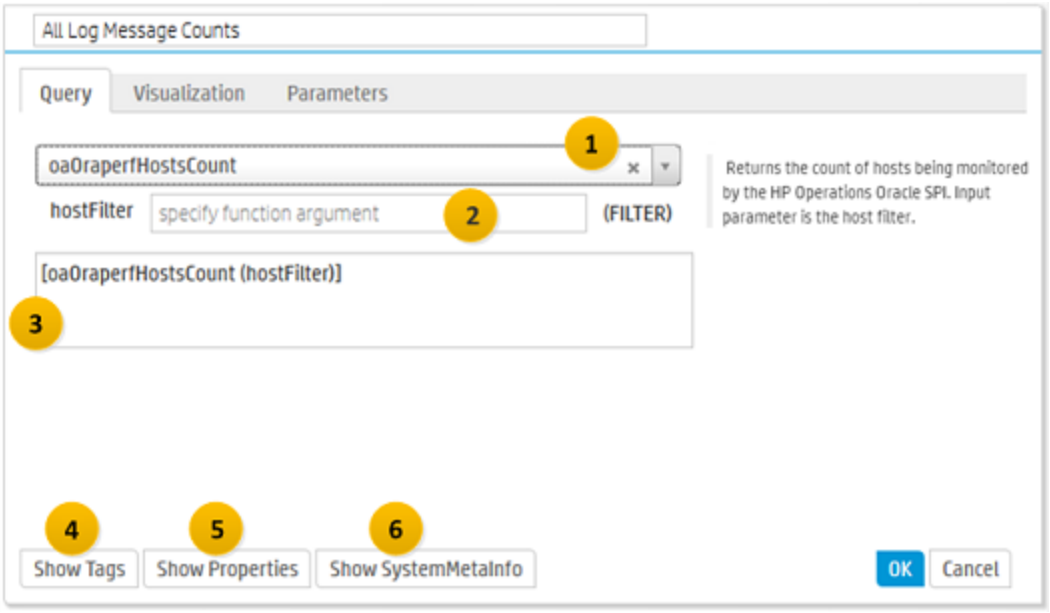
Add / Edit Query Pane - Query Tab

When adding a new query pane, you can use the **Query** tab to specify the pre-defined AQL function you want to use as your search query.

The following illustration highlights the main features of the Query tab.

Note: You can also choose to enter your own AQL query. If you want to use an AQL function, either select one from the list or create the function using a text editor. See the AQL Developer Guide for more information.

Click each number for information about a feature.



Chapter 3: Search Tool

The search tool allows you to create a dashboard by focusing on elements in your environment.

The search tool is located in the top right of the user interface. It searches for elements in your environment and creates a dashboard focusing on the specified item.

The search tool uses a proprietary query language called Phrased Query Language (PQL). This language is presented in a user friendly format and for the most part detailed syntax knowledge is not required. After you start typing, suggestions are automatically displayed. For more information about PQL syntax, see below.

Learn About

Example PQL queries

For the purposes of these example, the example host name is `myhost.enterprise.com` and the Los Angeles office domain is `la.enterprise.com`

Query	Results
`oracle performance withkey *enterprise.com`	Display all metrics associated with the tags **oracle** and **performance** for all host names in the ***.enterprise.com** domain.
`cpu_util withkey *enterprise.com`	Display the values for the **cpu_util** metric for all host names in the ***enterprise.com** domain.
`opsa withkey *enterprise.com,instance1`	Display the metrics associated with the tag **opsa** for the local host and for all hosts in the enterprise.com domain.
`service withkey MyService filtering groups withkey groupName1`	Used to filter the collection of database metrics for MyService. Displays only results for the database metrics for the group named **groupName1**.
log(`"connection error\""`)	Displays log entries with the string "**connection error ""**
log(`"severity AND critical"`)	Displays log entries that include the strings "severity" AND "critical"
service withkey MyService1	returns all information for MyService1
service withkey MyService1 filtering groups	returns all information for the group configured for MyService1
service withkey MyService1 filtering groups withkey groupName1	returns the related groups information for only the instance named **groupName1**

Search Tool Syntax - Advanced

The search tool uses statements that conform to one of the following models:

- tag1 tag2 withkey key attribute1, key attribute2, key attribute3
- tag1
- metric1 withkey key attribute1, key attribute2, key attribute3
- metric1

- If a key attribute includes a space, it must be in quotes. For example "my item".
- Multiple tags can be used. When more than one tag is present, the results returned are only those in which both tags are present.
- Aterisks (*) can be used as wildcards throughout the query.
- The keyword **service** indicates you want the query to return only the data related to the topology service you specify.

  ```
  service withkey myservicename
  ```

  Returns a dashboard with information about the service myservicename

  ```
  service withkey service1 filtering groups withkey group1
  ```

  Returns a dashboard with information about group1 within the service myservicename.

- Use the following syntax to query log files:

  ```
  "<string>"
  ```

  ```
  log ("<string> AND|OR <string>")
  ```

  To include quotes within your search query, precede each quote with the backslash character.

  You can also include tags in your log queries. For example, `system log("severity AND critical")` finds all metrics tagged system and log file messages containing **severity** and **critical**.

Tip: To view the tags and column names defined in your environment, see the SystemMetaInfo dashboard.

Tasks

How to use the search tool - basic

1. Click inside the Search tool and select the type of item you want to search for. You can select suggested items or manually type at any time.
2. Press the space bar to view additional modifiers for your query. The modifiers are based on the actual data in your system. For details about the syntax, see above.
3. Results:

   The results of each search is a dashboard. Operations Analytics uses its default dashboard layout and populates the dashboard with the data requested by your search.

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Chapter 4: Working with Query Panes

This section describes the different types of charts and visualizations used to display data in Query Panes.

Learn About

Data Types

Moving Aggregate Data Visualizations

Operations Analytics presents moving aggregate (time series) data as line charts, heat maps, bar charts and pie charts. Moving aggregate (time series) data is data that is displayed according to a time interval within a specified time range.

This data might include the total, average, minimum, or maximum values calculated at each interval over the specified time range. It might also include the count of unique instances or values. For example, you might want to view CPU utilization for each unique hosts in a specified domain at 1 hour intervals for the last 24 hours.

Operations Analytics displays time series (moving aggregate) data as a line chart by default.

Moving Aggregate Data Visualizations

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Operations Analytics displays time series (moving aggregate) data as a line chart by default.

Overall Aggregate Data Visualizations

Operations Analytics presents overall aggregate data as bar charts, pie charts, or tables.

Overall aggregate data is data that is grouped by total, average, minimum, or maximum values within a specified time range.

Operations Analytics displays overall aggregate (summary of totals, counts, averages, maximum values, or minimum values) data in table format by default.

Default Visualizations

If you select a visualization that is not supported by your Analytics Query Language (AQL) search query, Operations Analytics uses the default visualizations described in the following **Default Visualizations** tables. See "Dashboards and Query Panes" on page 11 for more information about selecting a visualization in a dashboard query pane. See the AQL Developer Guide for more information about AQL.

Default Visualizations by Types of Analytic Functions

AQL Query	Default Visualization	Valid Visualizations
Includes a Moving Aggregate (Time Series) Analytic Function	Line Chart	Line chart, heat map, bar chart, and pie chart
Includes an Overall Aggregate (Summary) Analytic Function	Table	Table, bar chart and pie chart

Tip: When using the topN or bottomN analytic function, Operations Analytics displays a bar chart by default. You can also use topN and bottomN analytic functions to visualize pie charts and tables.

About Bar Charts

You can use both moving aggregate (time series) and overall aggregate (summary) analytic functions to display your results as a bar chart.

Group the Results and Select the Items to Display

- You can group the items in a bar chart by entities or metrics. Entities are defined as any items that are measured by your metrics. To do so, select **Group by Entity** or **Group by Metric**.
- Select the entities or metrics to display by using the drop down menu.
- Select the group to display by using the **Go To Page** menu or the arrows at the bottom of the pane.

About Heat Maps

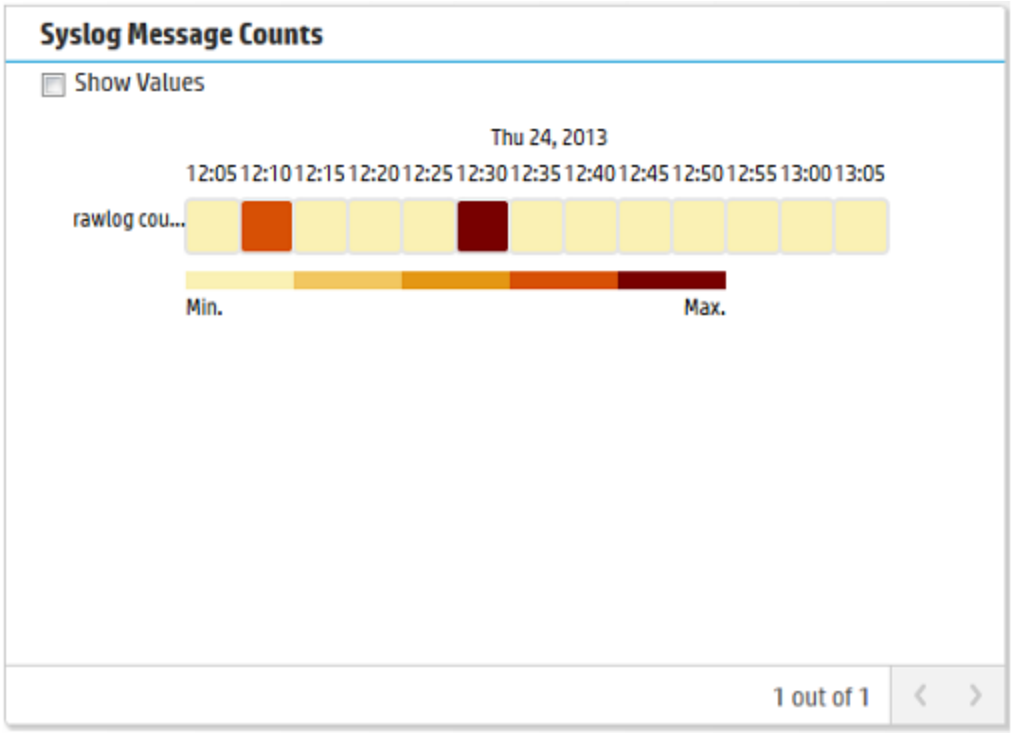
You can use moving aggregate (time series) analytic functions to display your results as a heat map.

Moving aggregate (time series) analytic functions display results according to a time interval within a specified time range. This data might include actual metric values or total, average, minimum, or maximum values calculated at each interval over the specified time range. For example, you might want to view CPU utilization for each unique host in a specified domain at 1 hour intervals for the last 24 hours.

Heat maps use a series of color-coded rectangles to map returned values to a scale based on the minimum and maximum values. Each cell color is determined as follows:

- Operations Analytics identifies the minimum and maximum value per the group by entity for the selected metric. The minimum and maximum values are identified in the available results for the selected duration.
- Operations Analytics calculates the percentage of each cell value in relation to the minimum and maximum value.
- The calculated percentage value is associated with a pre-determined color shade. For example, a value of 50 percent might be associated with a medium shade of orange.

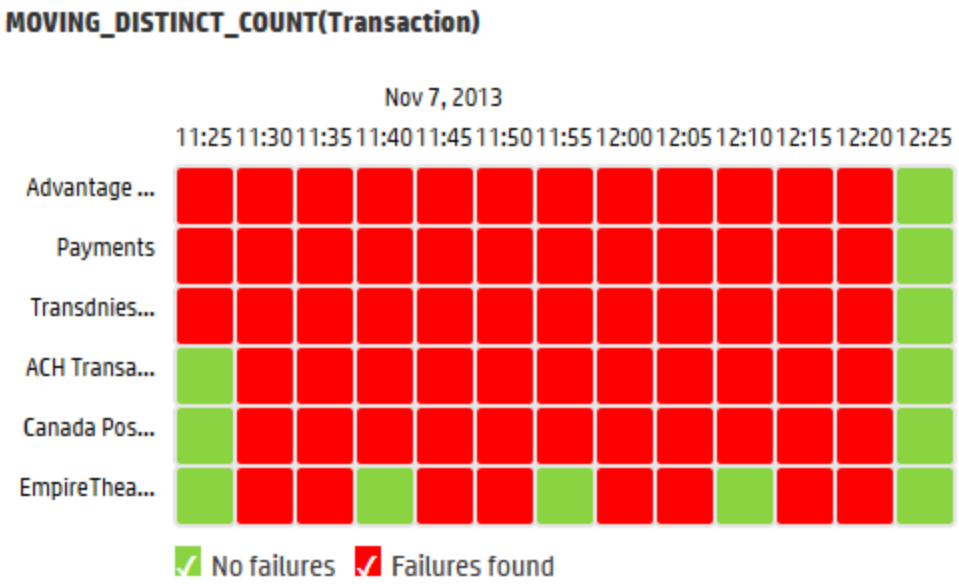
The following heat map example displays the number of syslog log file messages generated over a specified time period:



When using the heat map legend, note the following:

- The legend describes the minimum to maximum value ranges represented by each color used in the map.
- A clear rectangle indicates no data is available.
- Some dashboards provided by Operations Analytics use heat maps to display metrics that indicate some type of failure. Operations Analytics uses green to indicate **No failures** and red to indicate **Failures found**.

For example:



You can perform the following operations on heat maps:

Display the value within each heat map cell

You can display the first few characters of the value that is represented within each heat map cell by clicking ✔**Show Values**.

Calculate the percentage values using the minimum and maximum values for the entire matrix, per row, or per column

To re-calculate percentage values in a heat map:

1. Mouse over the query pane toolbar for the query pane you want to change.
2. Click to edit the query pane.
3. Navigate to the **Visualization** tab.
4. Select **Heat**.
5. Do either of the following:
   a. Select **Matrix** to calculate the heat percentages using the minimum and maximum values of the entire data set (matrix).
   b. Select **Row** to calculate the heat percentages using the minimum and maximum values per row.

c. Select **Column** to calculate the heat percentages using the minimum and maximum values per column.

6. Click **OK**.

Operations Analytics recalculates the heat colors based on the new minimum and maximum values.

View additional heat maps in a query pane

Operations Analytics enables you to navigate through a series of heat maps by using the and buttons.

Modify the color scheme

Operations Analytics enables you to choose from a number of different color schemes for heat maps. To do so, click the Settings  button and select **Color Scheme**.

About Line Charts

You can use moving aggregate (time series) analytic functions to display your results as a line chart.

When using line charts, note the following:

- Operations Analytics displays multiple line charts in a single query pane when the Analytic Query Language (AQL) search query requests in multiple line charts.
- Operations Analytics displays time series information in line chart format by default.
- When creating BPM line charts, if you want to see data gaps (for when an application status was unavailable), add `i.status` to the AQL query.

  Example: In the following example, add the bold text to the AQL Query.

  from i in (bpm_application_performance) let analytic_interval=between($starttime, $endtime) let interval=$interval select i.application, moving_avg(i.transaction_response_time), **i.status**

You can perform the following operations on line charts:

- To change the order that items are displayed in the list, select **Group by Entity** or **Group by Metric**.
- To display different entities or metrics, select the check boxes next to the items in the list.
- To view a prediction line for an entity or metric, click the Predict button. For details, see "Predictive Analytics" on page 44.

About Pie Charts

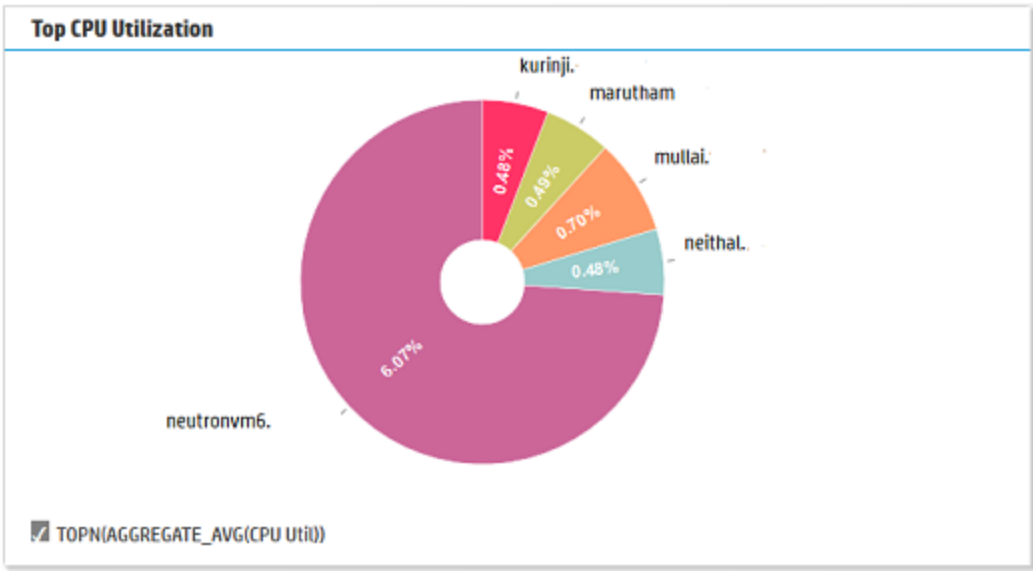
You can use both moving aggregate (time series) and overall aggregate (summary) analytic functions to display your results as a pie chart.

Moving aggregate (time series) analytic functions display results according to a time interval within a specified time range. This data might include the total, average, minimum, or maximum values calculated at each interval over the specified time range. For example, you might want to view CPU utilization for each unique hosts in a specified domain at 1 hour intervals for the last 24 hours.

Each moving aggregate value displayed represents a re-computed value using each data points per interval within the specified time segment. For example, the moving_avg analytic function calculates the average of all average values returned for the specified time frame and metric or attribute. Operations Analytics displays each of these re-calculated values, one per pie chart segment.

Overall aggregate (summary) data is data that is grouped by total, average, minimum, or maximum values within a specified time range. For example, you might want to view the total number of log messages generated by each host within a specified domain within the last hour.

Operations Analytics displays the values for each pie segment as shown in the following example:



Select items in the chart to generate a new dashboard focusing on the selected item.

About Sunburst Charts

Sunburst charts display the hierarchy you defined using the topology manager. They display services, their associated groups, their associated hosts, and the top metrics for each host.

To interpret the data in a sunburst chart, note the following:

- The root or center of a sunburst chart does not represent an object.
- Sunburst charts use color ranges to show the relative weight of a metric among the set of objects rather than to show status. Operations Analytics uses a darker color to indicate there is more of a particular value and a lighter shade of the same color to indicate there is less of a value.
- Gray indicates no values are available.
- Operations Analytics calculates the color fill for each parent node using the average color of all child nodes. When determining the average, It ignores any node with a fill color of gray.

You can perform the following operations on a sunburst chart:

- To select a metric to display, use the dropdown menu.
- To return the sunburst chart to its orignial detail, click the center of the chart.
- To drill down into any of the elements in the chart, click the element.
- To modify the color scheme, click the Settings button and select **Color Scheme**.

About Table Data

Operations Analytics presents overall aggregate data as bar charts, pie charts, or tables. Overall aggregate data is data that is grouped by total, average, minimum, or maximum values within a specified time range.

Operations Analytics displays overall aggregate (summary of totals, counts or averages) data in table format by default.

Note: Operations Analytics also displays log file information in table format by default.

When viewing table data, note the following:

- You can use an AQL query to specify the column names to be displayed. Operations Analytics displays each column name in the order in which it appears in the AQL query.
- If you do not specify column names in your query, Operations Analytics initially displays a maximum of eight columns.
- If more than eight columns are returned from the search, Operations Analytics displays the set of columns that are determined to be of the most value. Examples of these "preferred" columns include **raw**, **message**, **title**, **severity** and **host**.
- Operations Analytics does not display identification columns that are for internal use only.

You can perform the following operations on table data:

- To filter the results, enter a string in the text field.
- To restore the original column settings, select the **Columns** drop down menu and select **Restore original**.
- To sort the data, use the up and down buttons at the top of each column.
- To get more details about a row, click . To hide the details, click .
- To show or hide columns, select the **Columns** drop down menu and use the check boxes next to the column names.

About Log Analytics

You can display messages sorted according to significance by using the Log Analytics visualization. Log Analytics is a forensic tool that scans your log messages over a given time range and generates a list of the most significant ones.

This visualization is only available for specified AQL queries. For details, see "Log Analytics" on page 39.

Chapter 5: Filter Search Query Results

Operations Analytics enables you to filter your search query results using the following methods:

Tables only. Use the **Filter** option to filter the results by words or phrases.

The **Filter** option enables you to filter the results according to a word or phrase.

Note: The word or phrase you enter must be an exact match in the results displayed.

Use the Time Line to fine tune the Time Range selected.

Operations Analytics enables you to focus on a specified time segment using the slide bar that appears above the metrics, log file and event data displayed. For example, you might want to focus on a particular day or a particular peak period.

Note: The time range attribute that appears next to the search query initially defines the x-axis for the bar, line or plot diagram displayed as well as the time frame for the log file and event information that is displayed.

Changing the Time Line segment, changes the information displayed in visualizations and tables for all metric and log file and event data.

To filter your analysis by time segment:

Slide each end of the time line to the beginning and end point of the time you want to use:

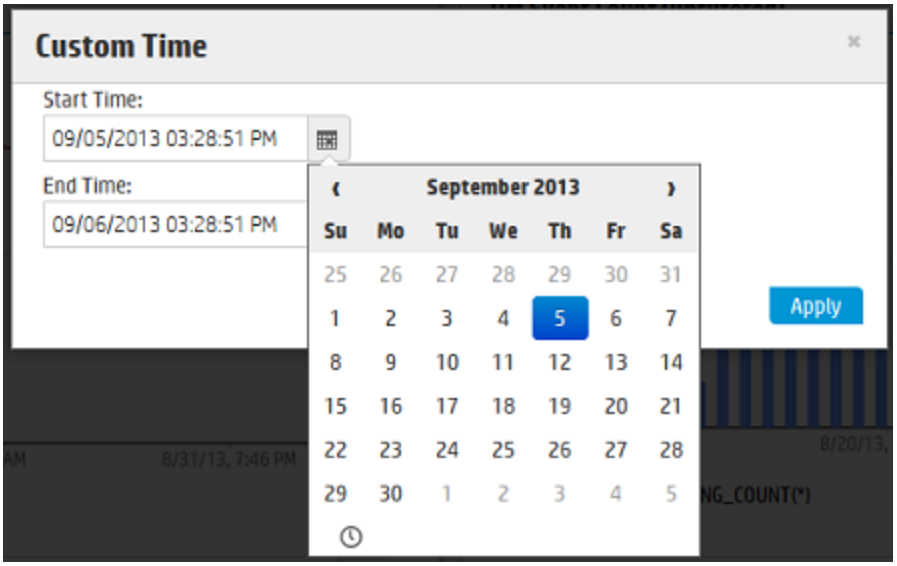
Operations Analytics filters the information available to focus only on the time segment you selected in each of the metric visualizations displayed. The log file and event information is also filtered based on the time segment you specify.

Use the Time Range option to filter the results by a specified time period.

To change the time range for the data displayed, by doing either of the following:

- Refine your search query to narrow the information presented.
- Change the time range value from the Time Range drop-down menu to narrow or broaden the time range for which the data is displayed:

Use the **Custom Time** option when you want to specify a start and end date using the Operations Analytics calendar:



See "Search Tool" on page 24 for more information.

Chapter 6: Play Back History

Operations Analytics enables you to play back your dashboard results using the ▶ Play feature.

Use this feature when you want to view the most recent changes in data over time or when you want to note the point at which a problem began to occur.

When using this feature, note the following:

- Operations Analytics uses the start and end time specified in the time line.
- Operations Analytics selects the optimum time segment within the specified start and end time in which to display the results. For example, if the time line specifies 1 day, Operations Analytics might choose a time interval of 1 hour. If the time line specifies 1 hour, Operations Analytics might choose a time interval of 5 minutes.

> **Note:** If you provide an $interval parameter value in a **query pane**[1], Operations Analytics uses the $interval value you specify for the time segment for only that query pane . See "Dashboards and Query Panes" on page 11 for more information.

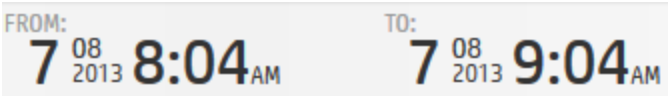
To play back your search query results:

1. Click « Playback.
2. Click ▶ (Play).
3. Do any of the following:
   - To pause the recording, click ❚❚ (Pause) or press the spacebar. To unpause press the spacebar again.
   - To fast forward to a new location, click ❚❚ (Pause), then ▶▶ (Fast Forward).
   - To rewind to a new location, click ❚❚ (Pause), then ◀◀ (Rewind).
   - To reverse play, click ◀ (Back).

> **Note:** If a query pane shows multiple pages of data, Operations Analytics replays only the results for the current query pane.

[1]Displays the results of an Analytic Query Language (AQL) query, AQL function, or AQL expression. If you use the Phrased Query Language (PQL) in your search, HP Operations Analytics converts the PQL query to one or more AQL queries and subsequent query panes.

As Operations Analytics replays the results, it indicates each point in time for which data is displayed as shown in the following example:



When you finish viewing the playback results, click (Pause).

To restore the dashboard to its original state before using the play back feature, click « Playback.

Chapter 7: Log Analytics

Log Analytics is a forensic tool that scans your log messages over a given time range and generates a list of the most significant ones.

To Access:

Search for a host, group of hosts, or service using the search tool. Locate the **Log Analytics - Top Unusual Log Messages** Query Pane.

Learn About

About Log Analytics

Searching for the root cause of a problem can be daunting. Even using OpsA's PQL searching technology, knowing where to start can be difficult. OpsA has designed a powerful Log Analytics algorithm that creates a list of the top suspected log messages. This algorithm runs over a user-defined time range for a host or a user defined group of hosts (a service). The Log Analytics algorithm uses a number of different parameters to calculate message significance, such as:

- Distance from problem time (user defined)
- Severity
- Specific keywords (for example: Exception)
- Repetition and seasonality (to identify insignificant messages)
- User feedback

The results can be viewed as a graph or in a list format.

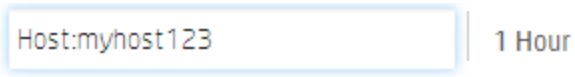
About Message Groups

Operations Analytics automatically analyzes your messages and creates message groups. Message groups are comprised of messages with very similar texts. These groups can later be liked, ignored, and analyzed as one unit. For details, see the tasks below.

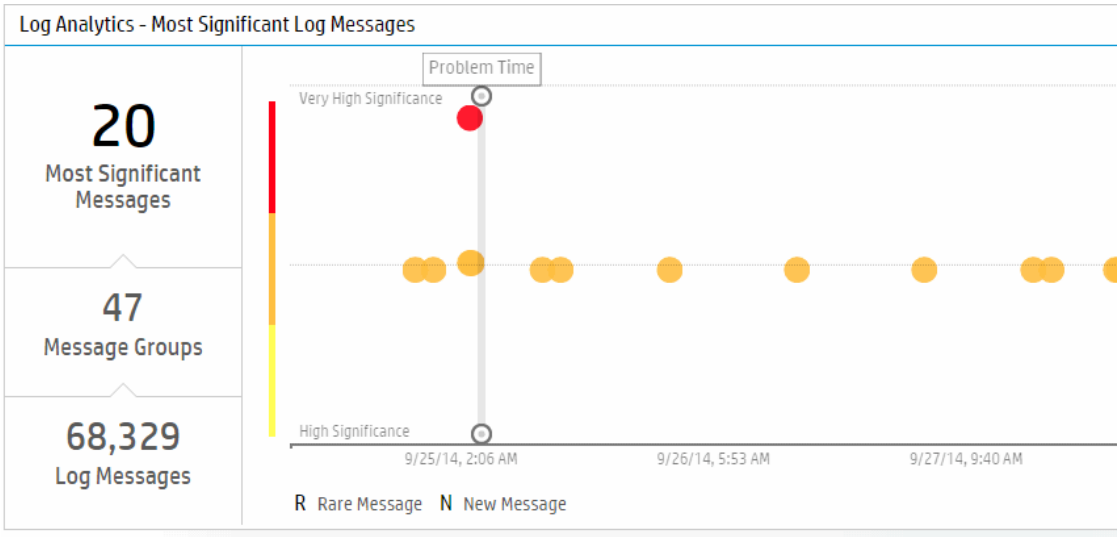
Tasks

Log Analytics Workflow

1. Prerequisite: Make sure that you have performed the steps for configuring log analytics in the Operations Analytics Quick Start Guide .
2. Search for a host, groups of hosts, or a service using the search tool.

   Alternatively , you can add the Top Unusual Log Messages query pane to a custom dashboard. For details, see below.
3. Locate the **Top Unusual Log Messages** query pane and define the time the problem started in the query pane by sliding the **Problem Time** indicator to the appropriate time. OpsA then recalculates the most significant messages based on the problem time you select.

4. Hover over the bubbles in the graph to view the tooltips. At this point in the procedure, all additional steps are optional and you can stop as soon as you have located the root cause of your problem.
5. Click a circle or the area labelled **X Most Significant Messages** on the left to open the log viewer.

   Note: To open the log viewer in the general log messages tab, select the area labelled **X Log Messages.**

6. Use the filtering capabilities of the log viewer to locate the root of your problem.

   a. Use the fields at the top of each column to filter the results. For example, if you type "error" in the field at the top of the Message Text column, the results will be limited to items that have the string "error" in the log message text. Alternatively, you can double-click a word in the message text column to filter the results by that word.

   Note: You can use a variety of custom expressions in the Message Text field. For details, see below.

   b. Select **Show liked only** to display message groups that you have previously liked using the  button.

   c. You can manually ignore individual message groups by using the ignore  button. You can later restore these items by using the **Ignored Messages** button.

7. You can view the distribution of all messages that are similar to a specific message by viewing the graphs on the bottom right of the log viewer. When you select a message, the distribution of messages with the same group ID is displayed. When you select underlined text in the message text field, the distribution of messages with different values for the underlined text is displayed.

   Example: The message text is "Processing error on server 1234" You can click the string "1234" to view the distribution of server names for all messages that have the same text and the same group ID.

8. To view all messages, including non-significant messages, select the **Log messages** tab.

Modifying the Significant Message Calculation Model

Log analytics uses a number of different criteria to calculate which messages are significant. You can affect this calculation in the following ways:

- **Problem time**

  In the **Log Analytics - Top Unusual Log Messages** Query Pane, move the problem time indicator to the location that you believe the problem occurred. The significance of messages is calculated based on proximity to this time.

- **Keywords**

  OpsA uses certain keywords such as **Exception** to determine significance. You can add and remove additional keywords and set their importance.

a. Click the Settings button and select **Log Analytics Settings**.

b. Enter a display name and your keyword in the **Expressions** field.

> **Note:** You can use a variety of custom expressions in this field. For details, see below.

c. Indicate the relative importance of this expression in the **Importance** drop down menu.

d. Click **Add**.

- **Likes**

  In the log viewer, click the like button to indicate that this message group is significant to you. This information is used in future calculations to determine message significance.

- **Ignore**

  In the log viewer, click the ignore button to ignore a message group. This removes the message group from the log viewer list and the Top Unusual Messages chart. You can later restore these items by using the **Ignored Messages** button.

How to Add a Log Analytics Query Pane to a Custom Dashboard

Add a query pane with the following AQL query to a custom dashboard:

aqllogsummary(<aqllit></aqllit>, $starttime, $endtime, $problemtime)

For details about creating custom query panes, see "How to Add or Edit a Query Pane" on page 19.

How to Search for Strings in Log Analytics

You can improve your expressions when searching for strings by using the tips in this section. They are applicable in both the the Text field of the Log Viewer and the *Expressions field of the Log Analytics Settings user interface.

Expression	Meaning
and	Search for both strings before and after the expression. **For example:** *one and two* means search for the strings "one" and "two".
a space between strings	Spaces are interpretted as and expressions **For example:** *one two* means search for the strings "one" and "two".

or	Search for either the string before or after the or expression. **For example:** *one or two* means search for "one" or "two".
"expression"	Search for the exact expression (whole word only). **For example:** *one and two* means search for the exact expression "one and two". **Tip:** To search for a string that contains any of the other expressions described in this table such as ( ),? and, or, * put them in quotation marks " ". **Limitation:** You cannot search for a string in which the string itself contains quotation marks " ".
( )	Groups expressions **For example:** *(one or two) and three* means search for the string "three" and either "one" or "two". Parentheses can be used multiple times and can be stacked in expressions like *four and (three or (one and two))*.
*	The wildcard expression is intrepreted as any number of characters (including 0). **For example:** *User*23* means search for the string "UserX23" where X is any string including empty. **Exception:** If you use * at the end of a word and no other wildcard expressions are used, the results will only return strings that occur at the beginning of a message.
?	The limited wildcard expression is interpreted as one unknown character. **For example:** *User?23* means search for the string "UserX23" where X is any one character.

How to Modify the Color Scheme

Operations Analytics enables you to choose from a number of different color schemes for different visualization types. The top three colors in each scheme are used for Log Analytics visualizations.

Click the Settings button and select **Color Scheme**.

Chapter 8: Predictive Analytics

OpsA's predictive analytics enables you to generate a prediction line for one or more metrics based on past behavior and seasonal trends.

To Access

To turn on predictive analytics in a Metric Data query pane, click the **Predict** button.

Click  to specify the length of the prediction line. By default, the prediction line runs for one day.

Learn About

About Predictive Analytics

OpsA can predict the future behavior of some metrics and display this information in a query pane. The prediction line is displayed as a dashed line, with the option of adding a prediction sleeve to show the margin of error.

Typically it takes about 2-3 hours to gather enough information to enable the prediction feature. The prediction confidence indicates the strength of the prediction and can be viewed in the tooltip over the  icon. Confidence increases as more data is collected for a given metric.

The tooltip also displays the trend of the prediction over time. For example, if the prediction is that the value will decrease from the current time until the end of the prediction time, the tooltip will indicate that there is a descending trend line.

To calculate the prediction, OpsA makes use of the following items:

- Previous metric data and trends. For example, the data is steadily increasing or decreasing over time.
- Seasonal patterns (up to one month). For example, every morning at 8:30 there is a peak as employees arrive at the office.

Predictive analytics presents different displays depending on whether you are viewing one metric or more than one metric.

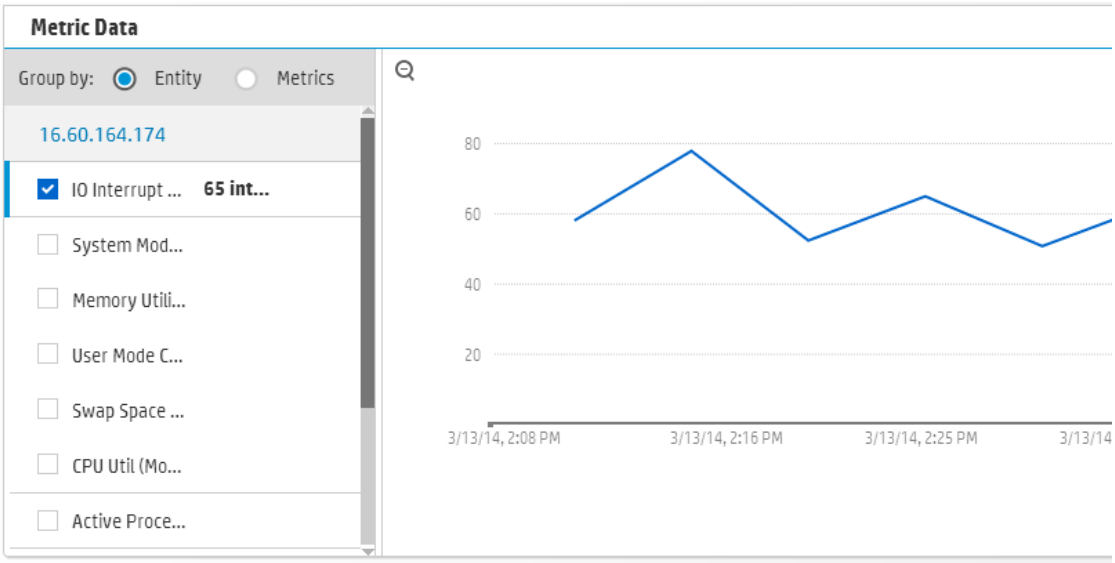
Limitations:

- While the prediction feature is generally accurate, inaccurate predictions can occur at times due to unexpected events.
- Most AQL statements are supported with the prediction feature, but a limited number are not.

Tasks

Using Predictive Analytics

1. Select the check boxes next to the items you wish to view.



2. Click the **Predict** 

button or click  to specify the time period. By default, predictive analytics is activated for one day.

3. To view the strength of the prediction, mouse over the  icon. To view the prediction sleeve which displays the margin of error, click  .

4. To remove the prediction lines, click **Stop Predict** 

.

Chapter 9: Alerts

Alerts allow you to trigger different actions based on conditions and time intervals that you specify. This feature allows you to use OpsA as a pro-active monitoring tool, in addition to OpsA's strong forensic capabilities.

Learn About

About Alerts

Alerts are based on the results of an AQL query. You can configure the alert to send an email, run a script, or send an SNMP trap.

Alerts are created based on AQL queries. The query is taken from a pane, but can be modified in the alerts wizard. Once the alert is created, the AQL defined in the alert is no longer connected to the AQL in the source pane (modifying one does not affect the other). The trigger can only be based on the number of results of the query over a given time, so care must be taken to select a meaningful AQL. For example, if you want to see an alert every time CPU utilization exceeds 80%, you must use an AQL that only displays instances in which the CPU utilization is 80% or higher.

The history of triggered alerts can be viewed in the OpsA Alerts dashboard provided by OpsA. This dashboard shows you all instances of triggered alerts going back three months by default.

You can drill down to open additional dashboards showing more details about an alert instance or time period surrounding an alert by clicking the time period or alert name of an alert instance.

About Ownership

Alerts are defined per OpsA tenant. Any user can create an alert. The creator of the alert and users with tenant admin permissions can edit and delete an alert. Others users can view, activate, deactivate, and add email recipients to alerts.

Limitations

You can create a maximum of 100 alerts per OpsA environment. For options about how to increase this maximum number, speak to HP Software Support.

Alerts cannot be created from Log Analytics panes.

User Tasks

How to Configure a New Alert

1. Before this procedure can be performed, your administrator must set up the alert action capabilities. For details, see below.

2. From a query pane, click the **Create Alert**  button.

3. Complete the **Create Alerts Wizard**. Details of selected user interface elements are described below.

   Details Page

UI Element	Description
Severity	Select the severity you would like to associate with instances of this alert.
AQL	The AQL query that will be used to calculate when to trigger an alert. This query is originally taken from a query pane, but can be modified. For example queries, see below. Once the alert is created, there is no connection between the query in the original pane and the query in the alert. This means that if the query changes in the host pane, this will not change the definition of the query in the alert.
Check data in the last..	When calculating whether or not to trigger an alert, the query is run over this time period.
Test AQL	Tests the query and returns and error if the query is not valid. Also returns the number of results for the query using the time period you specified above. Triggers are based on the number of query results.

   Schedule and Trigger Page

UI Element	Description
Run every **Run weekly** **Run monthly**	Determines how often to check if an alert should be triggered. **Note:** This schedule is determined by the client time zone, not the server time zone.
Trigger if number of results	Determines the condition to trigger the alert. The trigger is based on the number of query results over the time period defined in the Details page.

Action Page

UI Element	Description
Send email	Specify the email recipients and email subject. If there is more than one recipient, separate them using commas. For example: email1@abc.com,email2@abc.com You must specify which domains are permitted in the Alerts Settings.
Run script	This option is disabled if there are no scripts in the /opt/HP/opsa/inventory/lib/user/alerts/scripts/<tenant_name> directory. Input script parameters separated by commas. You can use any script parameters, as well as the following opsa variables as parameters: **<<AlertLink>>:** A link to an OpsA dashboard focusing on the alert instance. **<<AlertId>>** - The alert ID. **<<AqlDefinition>>** - The alert AQL query. **<<AlertName>>** - The alert name. **<<AlertUserId>>** - The user ID of the alert owner. **<<AlertTrigger>>** - The alert trigger condition. **<<AlertTimeFrame>>** - The alert calculation time period. **<<AlertSeverity>>** - The alert severity. **<<AlertAqlResultCount>>** - The number of results of the alert query over the defined time period. **<<AlertDescription>>** - The alert description. **<<AlertID>>** - The ID of the alert.
Encrypt	Encrypts the script parameters. This is recommended when passwords are included in the parameters.
SNMP	Define the SNMP server settings. If you select Default from Alerts Settings, this takes the settings from the Alerts Settings user interface. If you select Custom, you define the settings here.

UI Element	Description
Perform action on every trigger	Perform the alert action every time an alert is triggered.
Perform action at most once every	This defines a maximum number of times the alert action will be executed.
Run Test Alert	This triggers a test alert with the name **TestAlert<alertname>**. It can be viewed in the alerts dashboard. Additionally, if you configured an action the action is performed. The test alert trigger is displayed as -1.

4. Manage and edit the alerts via the **Alerts Manager** user interface.
   - Filter the results by using the **Alert Name**, **Severity**, and **Column** column headings.
   - You can temporarily deactivate alerts you don't need right now and activate them again at any time. Select the desired alert and click **Activate** or **Deactivate**.
   - Click the alert name to open a dashboard showing recent instances of this alert.

How to View Alerts

A summary of your alerts can be viewed in the OpsA Alerts dasboard provided by OpsA. This dashboard shows you all instances of triggered alerts going back three months by default.

You can drill down to open additional dashboards showing more details about an alert instance or time period surrounding an alert by clicking the time period or alert name of an alert instance.

You can search for an alert by using the search tool. Type **Alert** and hit space. Alert names located in your environment are displayed.

Note: The drill feature can sometimes take up to 30 minutes to function for newly created items. For example, alerts created in the last 30 minutes may return empty dashboards when attempting to click on the alert name from the alerts dashboard.

How to Activate or Deactivate Alerts

You can activate and deactivate alerts via the **Alerts Manager** user interface. If an alert is deactive, it is saved but no alerts are triggered and no actions are taken. Active alerts are fully functional. The Alerts Management user interface can be found by clicking the Settings  button.

How to Edit an Alert

You can edit alert definitions via the **Alerts Manager** user interface. The Alerts Management user interface can be found by clicking the Settings button.

Administrator Tasks

How to Set up Alert Action Capabilities

Before you can configure alerts to trigger an action, an opsa user with at least tenant administrator permissions must configure the desired action in the Alerts Settings dialog box. The settings in this dialog box are shared by all tenants in the OpsA environment. For any changes to this dialog box to take effect, you must restart the **opsa-task-manager** and **opsa-server** processes.

Email

In order to send an email as an alert action, you must set up an SMTP server to send the emails. To do this, go to the Settings Menu and select **Alerts Settings** and complete the SMTP section. In the Allowed Domains field, enter the email domains that are valid email alert recipients separated by commas. If this field is empty, all domains are allowed.

Restart the **opsa-task-manager** and **opsa-server processes** for the changes to take effect.

If you are working in a hardened environment, see "Configuring SSL for the SMTP Server Used for OpsA Alerts" in the HP Operations Analytics Configuration Guide for details about how to configure the SMTP server to work with SSL.

Script

In order to select a script as an alert action, you must have a script in the following directory on every server appliance server:

/opt/HP/opsa/inventory/lib/user/alerts/scripts/<tenant_name>/

- Only shell scripts (.sh) are supported.
- The script must have permissions of exactly 0700 and the file owner must be "opsa".

SNMP

1. To configure default SNMP settings, go to the Settings Menu and select Alerts Settings.

   Here you define the default SNMP settings that can be used by all SNMP alerts. If default settings are defined in the Alerts Settings user interface, and are selected for a given alert, the values in the Alerts Settings are always used for that alert. If you later modify the values in the Alerts Settings, they are dynamically modified in all alerts set to use the default settings.

Note: Although OpsA supports SNMP versions 1 and 3, when using the default settings only version 3 is supported.

2. To configure your SNMP server to better read the SNMP traps from OpsA, we recommend uploading the following file to your SNMP manager:

   /opt/HP/opsa/inventory/lib/user/alerts/OpsAAlerts.mib

   The contents of the SNMP trap can be deciphered by opening the MIB file.

3. Restart the **opsa-task-manager** and **opsa-server** processes for your changes to take effect.

How to Manage Alert Resources on Vertica

OpsA alerts use the same Vertica database resource pool as OpsA panes. If OpsA alerts are consuming too many resources, this may result in performance issues for OpsA panes.

To resolve this issue, you can configure OpsA alerts to use a designated resource pool in Vertica. For details about Vertica resource pools, refer to the Vertica documentation.

To use this feature, create a resource pool in Vertica for this use and specify it by name in **Settings > Alerts Settings > Vertica Settings**.

Example resource pool using Vertica Vsql database utility that can be used by OpsA:

dbadmin=> CREATE RESOURCE POOL ALERTS_POOL EXECUTIONPARALLELISM 4;

Example AQL Queries

Examples

The following are examples of possible AQL queries that could be used to create an alert.

1. BPM transactions that took longer than 4 seconds.

   from i in (bpm_application_performance) where (i.transaction_response_time>"4000") let analytic_interval=between($starttime, $endtime) let interval=$interval group by i.application select i.transaction_response_time

2. Host in which a system metric (sitescope_cup_metrics) has crossed a specific value (moving_ avg(i.utilization)).

   [metricQuery({sitescope_cpu_metrics}, {((i.target_name ilike "myd-vm04172"))}, { i.target_name}, {moving_avg(i.utilization)})]

3. Log messages with the string "Collection configuration".

aqlrawlog(<aqllit>(message CONTAINS "Collection configuration")
</aqllit>,$starttime,$endtime,"",$limit)

4. Log messages with the strings "Collection" AND "configuration".

   aqlrawlog(<aqllit>(message CONTAINS "Collection" AND message CONTAINS "configuration")
   </aqllit>,$starttime,$endtime,"",$limit)

5. Log messages with the string "error".

   aqlrawlog(<aqllit>(message CONTAINS "error")</aqllit>,$starttime,$endtime,"",$limit)

6. 404 error messages.

   aqlrawlog(<aqllit>(message CONTAINS "404") AND (sourceServiceName CONTAINS "OPSA")
   </aqllit>, $starttime, $endtime, "", $limit)

7. Log messages with critical severity.

   aqlrawlog(<aqllit>(sourceServiceName CONTAINS "OPSA") AND (agentSeverity CONTAINS
   "Critical")</aqllit>, $starttime, $endtime, "", $limit)

8. One of three specified hosts exceeded 90% CPU usage.

   from i in (oa_sysperf_global) let analytic_interval=between($starttime,$endtime) let
   interval=$interval let aggregate_playback=$aggregate_playback_flag where ((((i.host_name like
   "myd-vm011*") || (i.host_name like "myd-vm023*")) || (i.host_name like "opsa22*")) && (i.cpu_
   util>40)) group by i.host_name select i.cpu_util

9. Free disk space of a specified host has gone below 2GB

   from i in (nnmispi_netcomponent_component) where ((i.disk_space_free_mb < 2000) && (i.host_
   name like "*")) let analytic_interval=between($starttime,$endtime) let interval=$interval let
   aggregate_playback=$aggregate_playback_flag group by i.host_name select i.disk_space_free_
   mb

Chapter 10: Topology Manager

The Topology Manager enables you define a logical hierarchy for monitored hosts. You can group hosts together based on their function, their location, or any other grouping that is meaningful to you when organizing your services.

Learn About

Services, Groups, and Hosts

Hosts are organized into **groups** and **services**. A **service** is a collection of **groups**, and a **group** is a collection of **hosts**.

For example, you might create a service that includes web servers, applications servers, and database servers. In order to easily reference all these hosts and get a holistic view of the service, you would create groups for web servers and so on. The groups will correspond to the groups you want to look at in Operations Analytics. A subsequent search for this service will return results for all the underlying hosts, providing a single pane of glass for all hosts that make up the service.

Tasks

How to define a service:

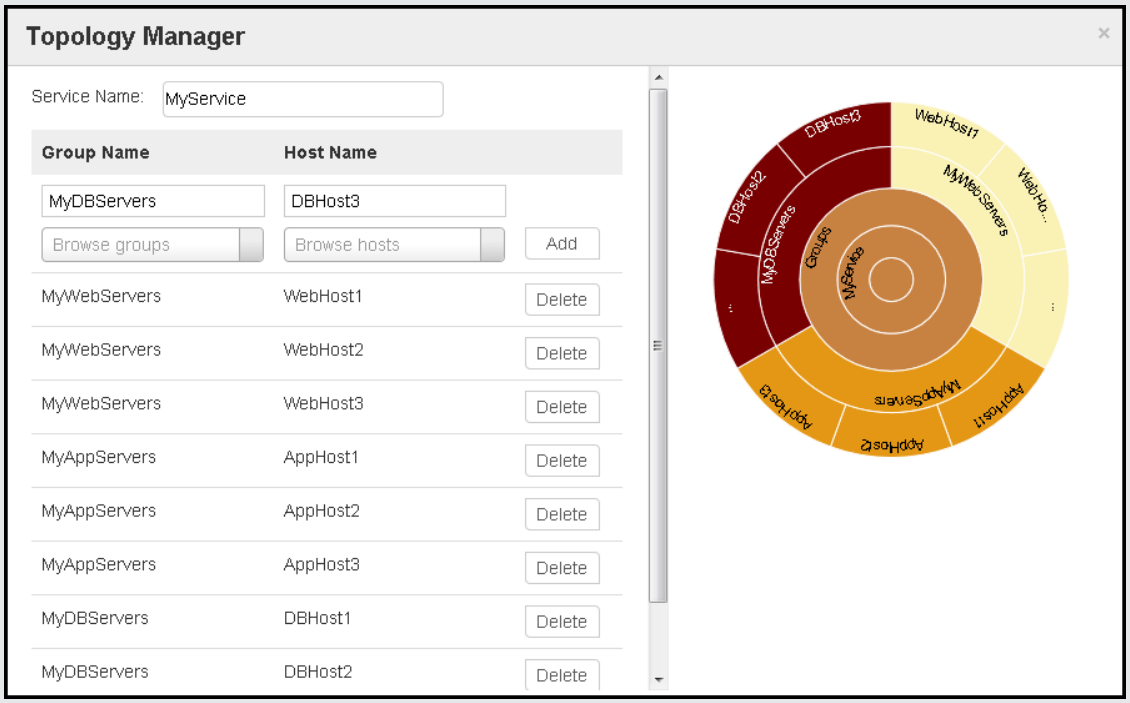
1. Click **Settings** and select **Topology Manager**.
2. Select **New**, and enter a name for your service.
3. Enter a group name and a host, then click **Add**.

   Tip: You can define a dynamic set of hosts by using the * symbol. For example, if you enter **dbhost*** as your host name, OpsA will add all hosts that begin with the string **dbhost** to the specified group. The group definition will be updated automatically if additional hosts are defined with the string **dbhost**.

   You can select the host from a list; as you type the first letters of the host, the list filters automatically. When adding a host, you can add it to an existing group or to a new one.
4. Continue defining groups and their hosts until you are done, and then click **Save**.

As a simple example, you can define a service called MyService, as follows:

- This service is made up of the groups **MyWebServers**, **MyAppServers**, and **MyDBServers**.
- These groups are made up of **WebHost1-3**, **AppHost1-3**, and **DBHost1-3** respectively.



After you define a service, you can then search for it and view metrics, events and logs that are relevant to all the hosts in that service.

Searching for a Service Defined in Topology Manager

After you have defined a service, it can be referenced in searches and resulting dashboards.

For example, suppose you have defined a service called MyService, as follows:

- This service is made up of the groups **MyWebServers**, **MyAppServers**, and **MyDBServers**.
- These groups are made up of **WebHost1-3**, **AppHost1-3**, and **DBHost1-3** respectively.

You can now execute the following searches:

- `Service: "MyService"`. This search returns a dashboard with information regarding the different hosts in all the groups that are part of the **MyService** service, with their events and logs.
- `Service: "MyService" Drill To: "MyWebServers"` - This search returns a dashboard with data on all the hosts that belong to the **MyWebServers** group in the service, including metrics, events and logs.

Note: You can also use a host-based search (for example `Host: "WebHost1"`) to then focus on a

specific host that seems to have issues.

These different searches provide you with a drill-down capability. When you look at the service, you can pinpoint the group or in some cases the specific host that may be causing the issue. When you look at a group you can quickly focus on a specific host that exhibits problems. The final drill-down to a specific host helps you pinpoint the root cause of the problem.

For more details, see "Search Tool" on page 24.

Chapter 11: About Collections

This topic describes the terms and procedures related to data collection sources.

Learn About

About Keys and Link Tags

Keys identify a column in a collection that you want Operations Analytics to use to do either of the following:

- Narrow a search within a single collection
- Match metrics for one entity (collection row) to the same or related entity (collection row) across collections

Typically, key columns uniquely identify an entity instance.

When using a key column to narrow a search within only one collection, Operations Analytics returns only those metrics for the specified key column value. For example, if the **host_name** column is defined as a key in a cpu metrics collection, the host_name key column enables you to search for cpu metrics for a specific host name.

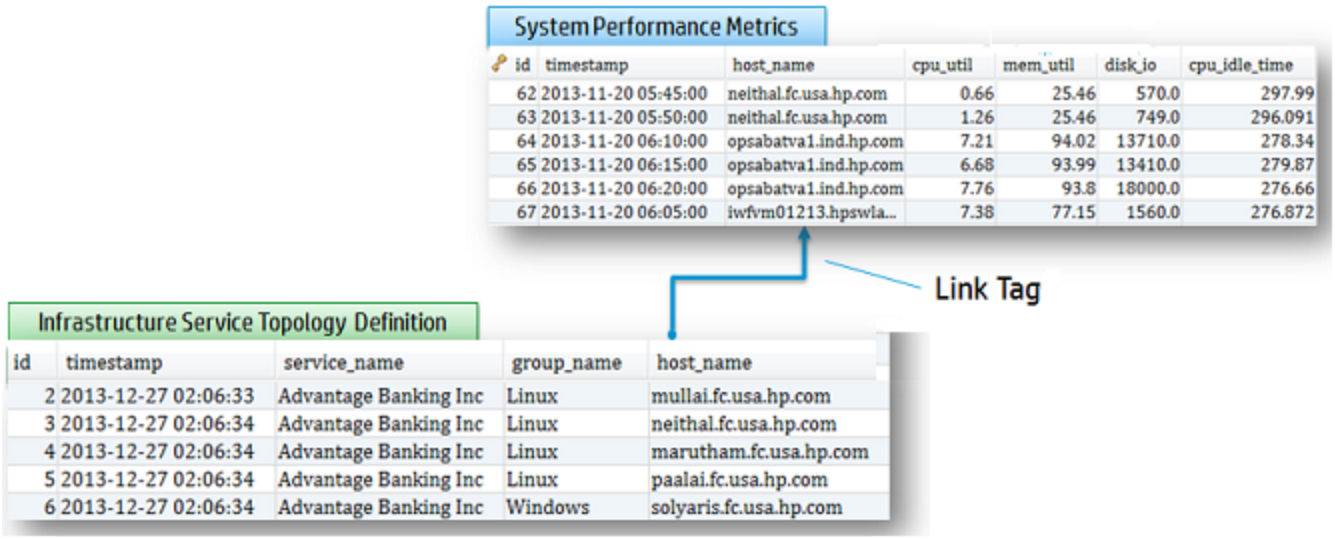
When using keys to identify a column in a collection that you want Operations Analytics to use to match metrics for a specific entity across collections make sure the required column is configured in each collection. For example, you might find that host_name is an attribute that identifies the host in most of your collections. However, perhaps in one or two collections, server_name is the attribute used to identify the host. In this scenario, you specify **host_name** as a key column in the collections that include the host_name attribute and **server_name** as a key column in the collections that include server_name. When a user enters a host_name value in a PQL search query, Operations Analytics looks for that value in all key columns across collections.

Keys also enable you to filter the scope of a search using link tags.

Link tags are special tags that associate two collections. The link between collections is based on one or more columns configured as keys . Values contained in a key column can then be used to filter one collection by the instances in another collection.

Note: You can link only two collections together in a single link tag.

The following diagram illustrates using the **host_name** key column to link an example Infrastructure **Service Topology Definition** collection with its associated system performance metrics stored in the **System Performance Metrics** collection.



Note the following:

- Operations Analytics includes link tags for the collections it provides. If you are an Operations Analytics administrator, see "Configuring Collections using Predefined Templates" in the HP Operations Analytics Configuration Guide for more information about these collections.
- When you define a service using the Topology Manager, Operations Analytics configures the link tags to establish the relationships between the collections for your service. You can then search for information using these relationships. See "Topology Manager" on page 53 for more information.

About Tags

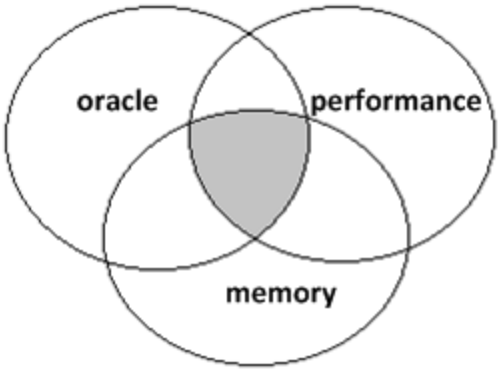
A tag is a word that is associated with a collection or with a metric or attribute that is stored as part of a collection.

Tags are used in the Operations Analytics Phrased Query Language (PQL) to create an Operations Analytics dashboard. They help to define the following:

Note: Tags are not limited to these example uses.

- Entities for which you want information, such as **host**, **database**, and **application**
- Hardware and software components, such as **cpu**, **memory**, **disk**, **interface**, **tablespace**, **process**, and **threads**
- Metrics or problem areas, such as **utilization**, **availability**, **performance**, and **change**

Operations Analytics returns results based on an intersection of the tags used in the search query. For example, the query **oracle memory performance** returns only the metrics that are associated with all three tags (**oracle memory performance**) as represented in the following diagram:



Note: If you include a hostname in your query, Operations Analytics refines the search to include only those metrics associated with the host name you specify.

As an Operations Analytics administrator, you might want to add, edit, or remove tags after they are initially configured. See opsa-tag-manager.sh (available from help > reference pages) and "Configure Your Collections" in the HP Operations Analytics Configuration Guide for more information.

To view the tags available for a collection, see "How to View Collection Information" on page 64 or use the opsa-tag-manager.sh (available from help > reference pages) command.

Uses for Tags

Use	Example	Result
Represent the data for an entire collection	If you have configured an HP NNM iSPI Performance for Metrics collection, the tag **performance** might be used for that collection.	When you type **performance** in your phrased search query, the value for all attributes in the NNM iSPI Performance for Metrics collection are considered for use in the metrics displayed.
Provide one or more synonyms for an attribute stored in a collection	The tag **host** might be used as a synonym for the attribute **host_name**	When you type **host** in your search query, Operations Analytics uses the value stored for **host_name** in each collection table for which the tag is defined.

Uses for Tags, continued

Use	Example	Result
Group attributes that provide similar information	The tag **cpu utilization** might be used to represent the following CPU attributes: • cpu_idle_time • cpu_sys_mode • cpu_util_time • cpu_util • cpu_user_mode • cpu_context_switch_rate • cpu_run_queue	When you type **cpu utilization** in your search query, Operations Analytics uses the values stored for the CPU attributes in each collection in which the tag **cpu utilization** is defined.
Focus on attributes that are prototypical	The tag **primary** might be used to tag the most important metric attributes for a specific area, such as cpu). This means that when the user enters **cpu primary** in the search query, the results focus on only a few important metrics, which are tagged as **primary**.	When you type **<*hostname*>cpu** in your search query, Operations Analytics uses the following metrics in its results. • cpu_idle_time • cpu_sys_mode • cpu_util_time • cpu_util • cpu_user_mode • cpu_context_switch_rate • cpu_run_queue When you type <***hostname***>**cpu primary** in your search query, Operations Analytics might use only the following metrics in its results. • cpu_util • cpu_user_mode

Uses for Tags, continued

Use	Example	Result
Group attributes across collections	The tags **performance primary** could be used for the attributes that assist with identifying performance problems across collections. As another example, you might tag all metrics that are useful for identifying status or health information across collections.	When you type **performance primary**, Operations Analytics returns performance metrics from both the HP Operations Smart Plug-in for Oracle and HP Operations Agent collections.
Dynamically extend your collections	Use the same tag name for more than one collection. For example, you might use the tag name **event** and **events** for the following collections: • HP Operations Manager (OM) • HP Operations Manager i (OMi)	When you type <*host name*> **events** in your search query, both the Operations Manager i events and Operations Manager events data is used to return your results.

About Meta Data

Operations Analytics stores collections information as meta data (descriptors). Example meta data information includes:

- Collection table names.

  Note: Operations Analytics stores metrics, topology, inventory, log file, and event information in the form of collection tables. These collection tables are also known as property groups. The columns that represent the metrics collected and that store values within these tables are also known as properties. A property can be either an **attribute**[1] or a **metric**[2].

- Metrics, attributes, and tags per collection.
- The length of time the data is retained per collection.
- Data type information per collection.

About Collectors

A Collector is responsible for collecting data from one or more data sources. The data collected is organized by collections.

[1]A descriptor stored in a collection for an entity, such as host_name.
[2]Typically a measurement stored in a collection. For example, CPU utilization.

Each collector is configured to run in an Operations Analytics Collector Agent.

Each server that is running the Operations Analytics Collector agent is configured as a Collector Appliance.

See "Adding a New HP Operations Analytics Collection" the HP Operations Analytics Configuration Guide for more information.

About Collections

Operations Analytics stores metrics, topology, inventory, log file, and event information in the form of collections. Each collection is associated with a database table in which an Operations Analytics Collector stores the data collected.

Note: These collection tables are identified in the Operations Analytics database as **property_group_uid.** The columns that represent the metrics collected and that store values within these tables are stored in the database as **property_uid**. This is important to know when using the SystemMetaInfo dashboard to identify text strings to include in your search queries.

As the Operations Analytics administrator, you configure one or more data sources per Operations Analytics collection.

See "Configure Collections" in the HP Operations Analytics Configuration Guide for information about how to configure collections.

Collection Data Sources

Operations Analytics gathers metrics, topology, inventory, event, and log file data from a diverse set of possible sources. The table below describes the details of these sources.

- The Operations Analytics administrator configures the collection data sources.
- Operations Analytics data sources marked with an asterisk (*) indicate the data sources for which Operations Analytics provides configuration templates.

Business Process Monitor (BPM)

Description: Collects metric data from HP Business Process Monitor.

Required Software: HP Business Process Monitor (BPM).

OpsA provides configuration template: yes.

Custom CSV files

Description: Collects metric, inventory, topology, log, and event data that resides in a CSV file.

Required Software: No requirements. Many applications export data, such as topology and metrics information, into CSV files. In addition, your network administrator might have written customized scripts to export data to CSV files.

OpsA provides configuration template: no.

Log files and Structured Log Files

Description: Collects raw log file information. These log files must be configured in HP ArcSight Logger or Splunk. If you are an Operations Analytics administrator, see the HP Operations Analytics Configuration Guide for more information.

Required Software:

- **Regular Log Files:** HP ArcSight Logger
- **Structured Log Files:** HP Operations Analytics or Splunk

OpsA provides configuration template: no.

Examples of Types of Log Files Collected by Default: syslog, database, applications, network device log files.

HP Operations Agent

Description: Collects global system information in the form of metrics. Examples of the type of metric collected by default include host name, time stamp, and global metrics such as CPU total utilization, and disk input and output rate.

Required Software: HP Operations Manager

OpsA provides configuration template: yes.

See the *HP Operations Agent User's Guide* for information about attributes that can be collected as metrics.

HP Operations Smart Plug-in for Oracle

Description: Collects global Oracle database information in the form of metrics.

Required Software: HP Operations Manager

OpsA provides configuration template: yes.

See the *HP Operations Smart Plug-in for Oracle Reference Guide* for information about attributes that can be collected as metrics.

HP Network Node Manager i Software (NNMi) Custom Poller

Description: Collects numeric metrics from any NNMi Custom Poller MIB expression.

Required Software: HP Network Node Manager i Software (NNMi)

OpsA provides configuration template: yes.

Examples of Metrics Collected by Default: Node Name, Time Stamp (ms), SOURCE, Node UUID, IP Address, MIB Expression, Poll Interval (ms), MIB Instance, Metric Value, Display Attribute, Filter Value.

See the *NNMi Help for Operators* for more information about each of these attributes.

HP Network Node Manager iSPI Performance for Metrics

Description: Collects interface and node component metrics from HP NNM iSPI Performance for Metrics. Examples of collected information:

- Interface health extension pack metrics
- Component health extension pack metrics

Required Software: HP Network Node Manager iSPI Performance for Metrics.

OpsA provides configuration template: yes.

See the HP Network Node Manager iSPI Performance for Metrics online help for more information about attributes that can be collected as metrics.

HP Operations Manager (OM) events

Description: Collects events generated by HP Operations Manager (OM).

Required Software: HP Operations Manager.

OpsA provides configuration template: yes.

Examples of Event Metrics Collected by Default: EventID, TimeReceivedTimeStamp, TimeCreatedTimeStamp, Severity, NodeName, State, EventText, MessageGroup, EventObject, MsgSource, Application, AutoState, AutoAcknowledge, OperatorAcknowledgeFlag, Service.

HP Operations Manager i (OMi) events

Description: Collects events generated by HP Operations Manage i Software.

Required Software: HP Business Service Management (BSM)

OpsA provides configuration template: yes.

Examples of Event Information Collected by Default: EVENT, ID, DATE_CREATED, DATE_RECEIVED, TIME_STATE_CHANGED, TITLE, DESCRIPTION, PRIORITY, STATE, SEVERITY, TYPE, CATEGORY, SUBCATEGORY, APPLICATION, ASSIGNED_GROUP, ASSIGNED_USER, CIREF_ID, HOSTREF_ID, HOSTINFO_IPADDRESS, HOSTINFO_DNSNAME, ORIGINATING_IPADDRESS, ORIGINATING_DNSNAME, SENDER_IPADDRESS, SENDER_DNSNAME, PARENT_ID, RC_FLAG, POLICY_TYPE, POLICY_NAME, CORRELATION_TYPE, CORRELATION_RULE_ID, LOG_ONLY

See the *HP Operations Manager Administrator's Reference* for more information about each of these attributes.

HP Run-Time Service Model (RTSM)

Description: Collects Configuration Item (CI) inventory information that is stored in BSM.

Required Software: HP Business Service Management (BSM)

OpsA provides configuration template: yes.

Examples of Inventory Collected by Default: CiId, CiType, display_label, name, description.

HP SiteScope

Description: Collects metrics such as CPU utilization, memory utilization, pages per second, and memory pool size. This list varies depending on your collection.

See the *HP SiteScope Monitor Reference* for more information about available monitoring attributes.

Required Software: HP SiteScope.

OpsA provides configuration template: no.

Tasks

How to View Collection Information

Operations Analytics stores metrics, topology, inventory, log file, and event information in the form of collection tables. Becoming familiar with the data collected is useful to help determine the type of queries you might want to perform. For example, you can include the collection name or its associated tag name to return all data from a specified collection. Because each collection is stored as part of a database table, you might also specify a collection column name (for example, cpu_util) to return a subset of data across one or more collections. See "Search Tool" on page 24 for more information.

When viewing collection information, use the mapping described in the table below to determine the collection information to include in your queries.

Note: As shown in the mapping table, collection tables are also known as property groups. The columns that represent the metrics collected and that store values within these tables are also known as properties. A property can be either an **attribute**[1] or a **metric**[2]. The property groups are uniquely identified by **property group uid** and properties are uniquely identified within a property group by **property uid**. When specifying a collection name or column name in your search query, use the **property group uid** and **property uid** values.

[1]A descriptor stored in a collection for an entity, such as host_name.
[2]Typically a measurement stored in a collection. For example, CPU utilization.

Column Descriptions for Meta Data Tables

Information	Table Column Name Displayed in the Dashboard
Collection names	property group uid
Columns (metrics or attributes) per collection	property uid
Tag names, if any, per collection or column	tag name
Columns defined as keys.	Look for rows in which the iskey value is true

Note: You can also use opsa-tag-manager.sh (available from help > reference pages) to view tag information.

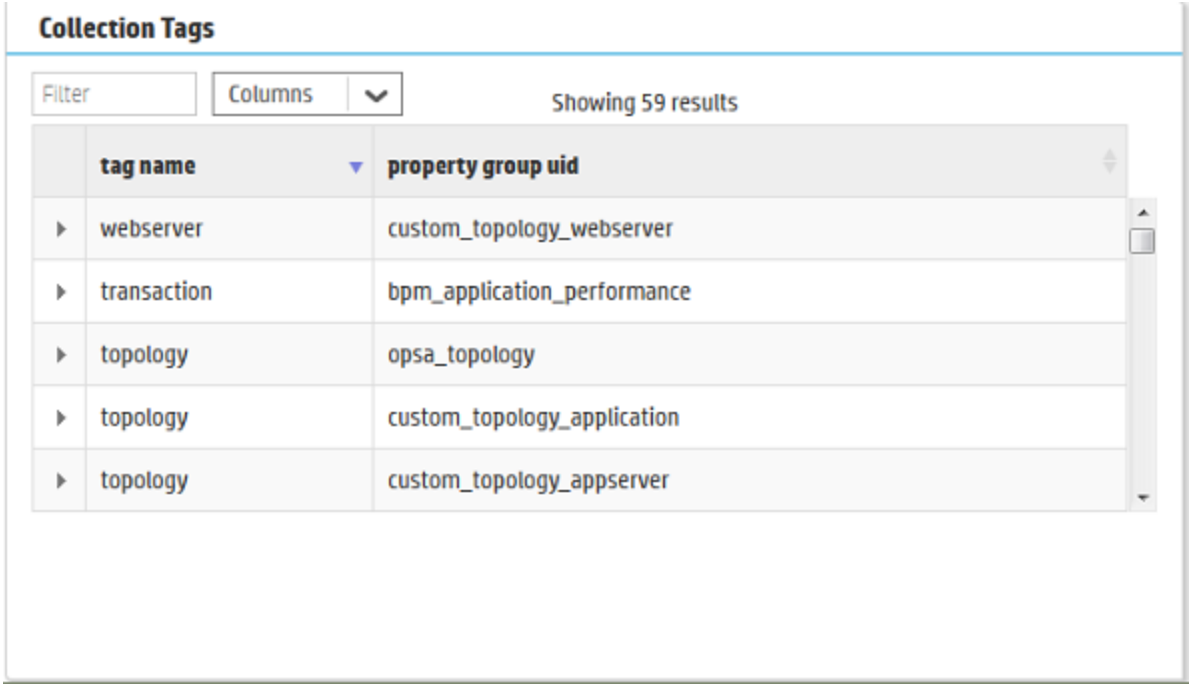
To view collection information:

1. Navigate to the **Dashboards** menu.
2. Select **SystemMetaInfo**.

   Tip: You can also access this dashboard using the **Show SystemMetaInfo** option when adding or editing a query pane.

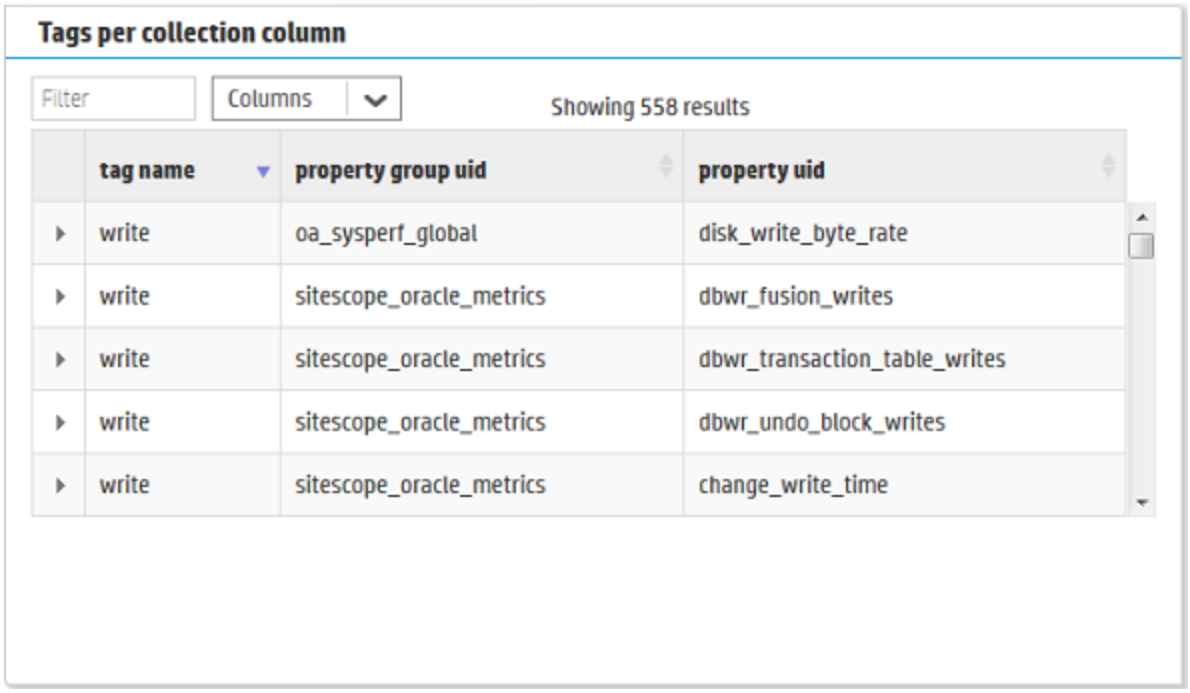
   Operations Analytics displays tables that include the following information:

- Tags, if any, assigned to each collection (property group uid):

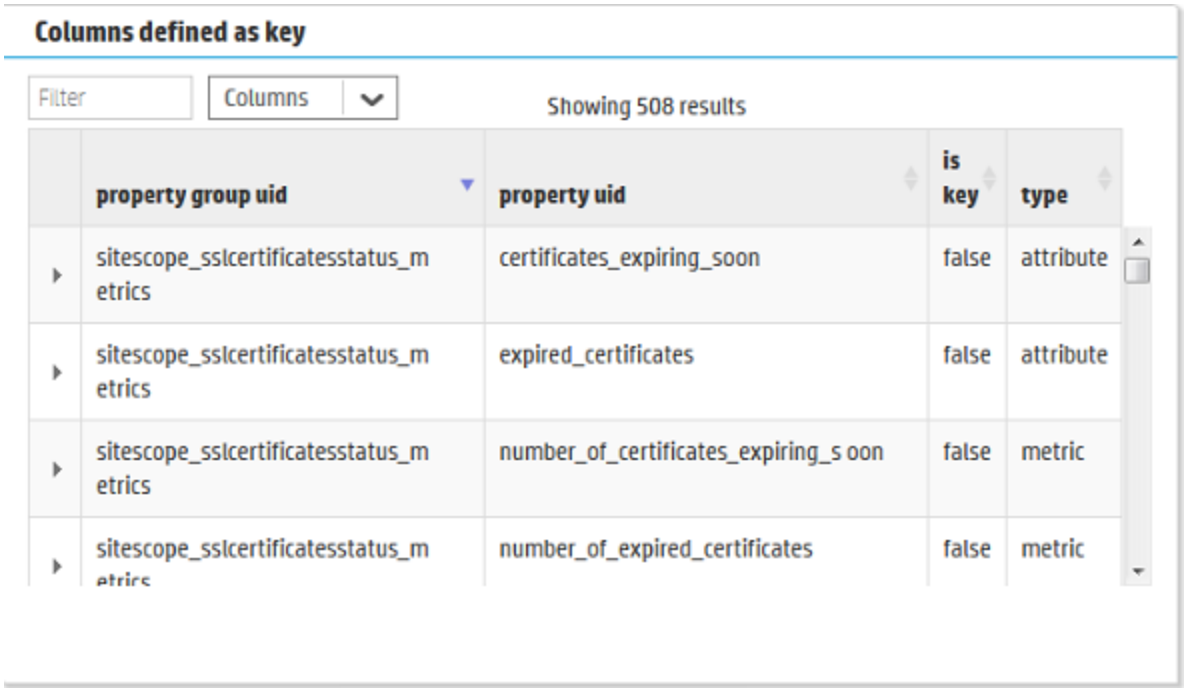


- Tags associated with columns (property uid) within each collection.

Tip: You can also access this table using the **Show Tags** option when adding or editing a query pane. See "Dashboards and Query Panes" on page 11 for more information.



- Columns that are configured as key columns (iskey) in each collection. Key columns are used to filter metrics across collections.



See "About Table Data" on page 33 for more information about working with tables.

Chapter 12: Configuring Collections

What are the two methods of configuring collections?

- This topic focuses on the first method, and explains how to use the Collections Manager dashboard to configure OpsA to collect data from the supported data sources you plan to use.
- The second method of configuring collections involves using the opsa-collection-config.sh script. See the Operations Analytics Configuration Guide for more information.

Learn About

About Configuring Collections

To configure OpsA to collect data from the supported data sources you plan to use, you must configure collections. Use the information in this section to configure OpsA collections.

Note: The collection configuration instructions shown in this section do not include configuring collections for the OpsA - OneView integration. OpsA configures those collections when you enable the integration. See the Operations Analtyics - OneView Integration Guide for more information.

Tasks

How to Access the Collections Manager

1. Log on to the OpsA Console with the tenant administrator credentials for your tenant. This would be the **opsatenantadmin** user when using the default tenant.
2. Click the **Settings** menu in the upper right.
3. Click **Collections Manager** to open the Collections Manager.
4. Click **Add Collection Instance** to pull down a list of potential collections and select the collection you want to configure.

Complete the collection configuration tasks using the instructions shown below for the collections you need for your environment:

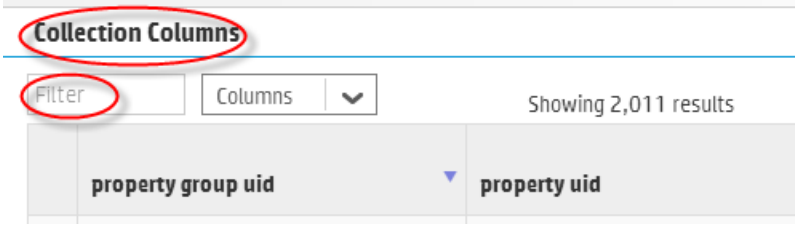
How to Configure a BSM RTSM CIs Collection

1. **Collect the Parameters**
   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **RTSM Host Name**: Determine the fully-qualified domain name of the RTSM DPS server.
   - **RTSM User Name**: Determine the user name to use for connecting to the RTSM DPS server. This value is typically `admin`.
   - **RTSM Password**: Determine the password for the RTSM user name to use for connecting to the RTSM DPS Server.
   - **RTSM Port**: 21212
   - **Skip Validation**: Select this check box if you want to create a collection without validating that it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.
2. Complete the Configuration
   a. Enter the parameters into the Collections Manager dialogue.
   b. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.
3. Validate the Collection Results

   Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.

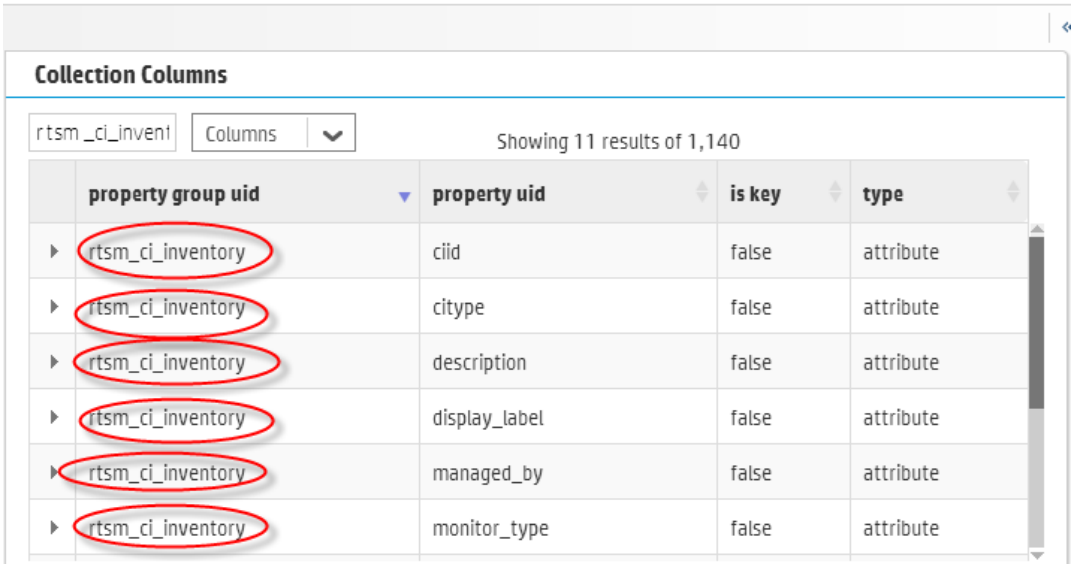
   After typing the property group uid (`rtsm_ci_inventory`) for this collection in the **Collection Columns Filter**, you should see information for this collection.

   a. Type the property group uid (`rtsm_ci_inventory`) for this collection in the **Collection ColumnsFilter:**



   b. After typing the property group uid (`rtsm_ci_inventory`) for this collection in the **Collection**

Columns Filter, you should see information for this collection.



4. Next Steps

   a. Create dashboards and query panes for the data you are now collecting. See "Dashboards and Query Panes" on page 11 for more information.

   b. Create AQL functions for the data you are now collecting. See the instructions shown in the *Define Analytic Query Language (AQL) Functions* section of the AQL Developer Guide for more information.

   c. If you want to add tags to an BSM RTSM CIs Collection, use the opsa-tag-manager.sh command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure a Business Process Monitor Collection

1. Collect the Parameters

   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **BSM DPS Host Name**: Determine the host name of the active BSM DPS Server.
   - **RTSM Integration User Name**: Determine the RTSM Admin user name.
   - **RTSM Integration Password**: Determine the RTSM Admin password.
   - **RTSM Port**: 21212

- **Skip Validation**: Select this check box if you want to create a collection without validating that it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.

2. Complete the Configuration

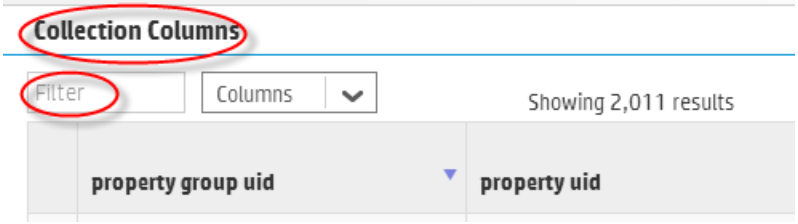
   a. Enter the parameters into the **Collections Manager** dialogue.

   b. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

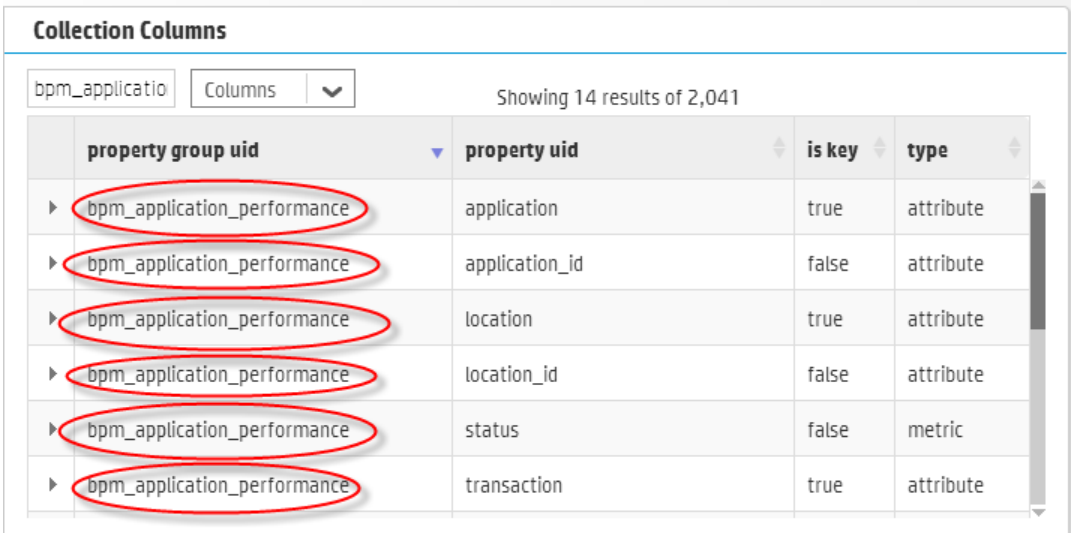
3. Validate the Collection Results

   Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.

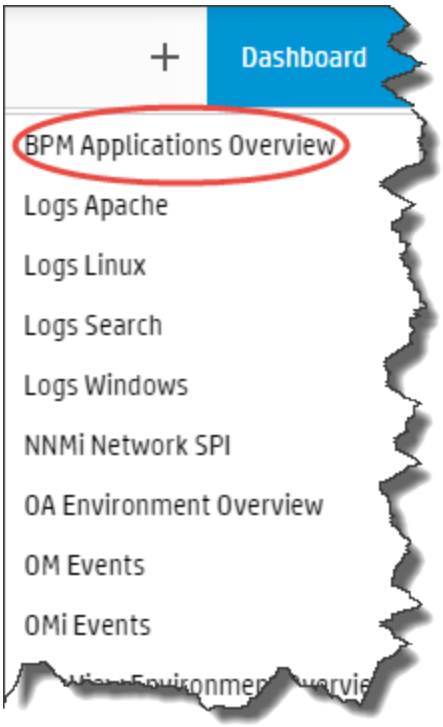
   a. Type the property group uid (`bpm_application_performance`) for this collection in the **Collection Columns Filter:**



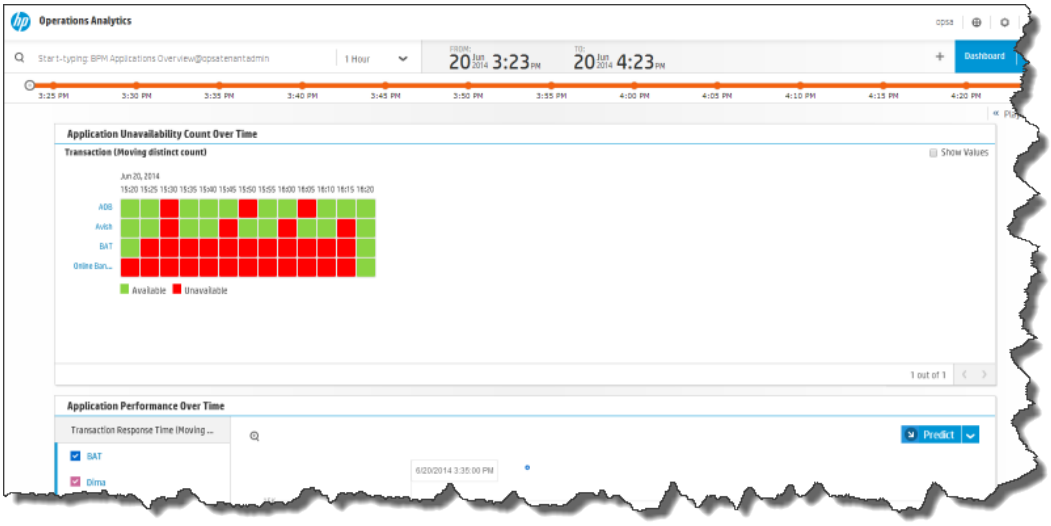
   b. After typing property group uid (`bpm_application_performance`) for this collection in the **Collection Columns Filter**, you should see information for this collection.



   c. From the OpsA Console, open the **BPM Applications Overview** dashboard to view some of the collected information for this collection:



The following is a small sample of the Business Process Monitor Collection data provided by the **BPM Applications Overview** dashboard.



4. Next Steps

   If you want to add tags to a Business Process Monitor Collection, use the `opsa-tag-manager.sh` command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics

Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure a Custom CSV Collection

1. Collect the Parameters

   Before configuring this collection, gather or choose values and complete any manual steps for the following parameters:

   Note: The values of `domain` and `group` are used to create the collection name.

   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **Domain**: Choose a domain that accurately describes a domain in which the data you plan to collect resides. The name of the collection will be **custom_<domain_name>_<group_name>**.
   - **Group**: Choose a group that accurately describes the group for which you plan to collect data. The name of the collection will be **custom_<domain_name>_<group_name>**.
   - **CSV Sample File Path**: Place a sample CSV file that contains a header row and at least one data row in any folder on the OpsA Server Appliance. Your entry must specify the full file system path to this sample CSV file.

     Note: The data source cannot exceed 1549 data columns. If you try to create a Custom CSV collection containing more than 1549 data columns, the collection creation will fail.

     Note: The maximum supported CSV file size is 500 MB.

   - **CSV Source Directory**: Create the `/opt/HP/opsa/data/mydata` folder on the OpsA Collector Appliance file system and provide read and write permissions to this folder for the opsa user.
   - **File Pattern**: Choose the file pattern for the files available in the source directory. For example, `*.csv` and `*myfiles*.csv` are file patterns you might use.
   - **Date Column Name**: The name of the CSV column that has the date/timestamp value.
   - **Date Format**: Choose the format string for the date/timestamp value. Use the letters shown in "Letters for Date Formatting" on the next page when configuring the date format to use when parsing date strings.
   - **Time Zone**: Specify the GMT or Java time zone string that represents your time zone.

Note: For the timezone field, do one of the following:

- If there are no time zone values inside a collection's csv files, specify the time zone in the **Time Zone** field. If you leave this field blank, the timestamps in the csv files will be processed as if they were in Coordinated Universal Time (the UTC time zone).
- If a collection's csv files contain a timezone value (such as `"01-01-2010 21:00:00 GMT+0200"`), and you want to use that timezone value, leave the **Time Zone** field blank and set the Date Format field above to contain the `z` symbol (such as `"MM-dd-yyyy HH:mm:ss z"`). Doing so tells OpsA to use the time zone from the csv files.

- **Key Attributes**: Choose at least one and no more than three column names that will be the key attributes for this collection. For more details, see "About Keys and Link Tags" on page 56.

  Note: Keys are required for PQL to work correctly for this collection.

- **Data Type**: Choose the data type for collection template. Select **metrics** or **events** depending on the type of collection you are creating.

  Metrics come from data collectors that collect performance and availability data, such as RUM and BPM. Events come from data collectors that collect event data such as HPOM.

- **Template Name**: The template is a file that saves the information used to create this collection. You can enter any name, but once created the name cannot be changed.
- **Template Version**: This allows you to have several template file versions. You can leave this value blank.
- **Skip Validation**: Select this check box if you want to create a Custom CSV collection without validating the structure of the sample csv file.

Letters for Date Formatting

Letter	Date or Time Component	Presentation	Examples
G	Era designator	Text	AD
Y	Year	Year	1996; 96
M	Month in Year	Month	July; Jul; 07
w	Week in Year	Number	27
W	Week in month	Number	2
D	Day in Year	Number	189

Letters for Date Formatting, continued

Letter	Date or Time Component	Presentation	Examples
d	Day in month	Number	10
F	Day of week in month	Number	2
E	Day in week	Text	Tuesday; Tue
a	AM or PM marker	Text	PM
H	Hour in day (0-23)	Number	0
k	Hour in day (1-24)	Number	24
K	Hour in AM or PM (0-11)	Number	0
h	Hour in AM or PM (1-12)	Number	12
m	Minute in hour	Number	30
s	Second in minute	Number	55
S	Millisecond	Number	978
z	Time zone	General time zone	Pacific Standard Time; PST; GMT-08:00
Z	Time zone	RFC 822 time zone	-0800

Interpreting Date and Time Patterns in the U.S. Locale

Date and Time Pattern	Result
"yyyy.MM.dd G 'at' HH:mm:ss z"	2001.07.04 AD at 12:08:56 PDT
"EEE, MMM d, ''yy"	Wed, Jul 4, '01
"h:mm a"	12:08 PM
"hh 'o''clock' a, zzzz"	12 o'clock PM, Pacific Daylight Time
"K:mm a, z"	0:08 PM, PDT
"yyyyy.MMMMM.dd GGG hh:mm aaa"	02001.July.04 AD 12:08 PM

Interpreting Date and Time Patterns in the U.S. Locale, continued

Date and Time Pattern	Result
"EEE, d MMM yyyy HH:mm:ss Z"	Wed, 4 Jul 2001 12:08:56 -0700
"yyMMddHHmmssZ"	010704120856-0700
"yyyy-MM-dd'T'HH:mm:ss.SSSZ"	2001-07-04T12:08:56.235-0700
Enter `epoch` in **Date Format** if the timestamps are in milliseconds from epoch or `epoch.sec` if the timestamps are in seconds.	

2. Complete the Configuration

   a. Enter the parameters into the **Collections Manager** dialogue.

   b. Click **Generate** and view the collection template XML file entries that were made based on the parameters you entered.

   c. The **Create a Collection - Custom CSV** editor opens. If necessary, use **one** of the following:

      - Click **Back** to enter different parameters.
      - Edit the parameters using this editor.

      Note: Either of these approaches modifies parameters that reside inside of the collection template XML file. Make sure to carefully check these parameters before you click **Create Collection** to continue with the creation procedure. See *Configuring a Custom CSV Collection* in the HP Operations Analytics Configuration Guide for more information.

   d. Click **Create Collection** to create and publish this collection.

      Note: You can create more than one Custom CSV Collections as long as each collection has a unique `domain-group` combination.

3. Validate the Collection Results

   From the Operations Analytics console, view the **OpsA Meta Info** dashboard.

   a. Type the property group uid for this collection in the **Collection Columns Filter**.

   b. Look for the property group uid for the collection you just created and published.

4. Next Steps

   a. Copy the CSV data files to the `/opt/HP/opsa/data/mydata` directory you created earlier.

   b. Create dashboards and query panes for the data you are now collecting. See "Dashboards and Query Panes" on page 11 for more information.

   c. Create AQL functions for the data you are now collecting. See the instructions shown in the *Define Analytic Query Language (AQL) Functions* section of the AQL Developer Guide for more information.

   d. If you want to add tags to a Custom CSV Collection, use the opsa-tag-manager.sh command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure a Log Analytics (Logger) Collection

Use the information in this section when configuring a Log Analytics (Logger) Collection.

Before continuing, if you have not already registered Logger, you must register Logger using the `opsa-logger-config-manager.sh` script. See *Configuring and Managing Logger or Splunk for a Tenant* in the Operations Analytics Configuration Guide or the *opsa-logger-config-manager.sh* reference page (or the Linux manpage) for more information.

1. Collect the Parameters

   Before configuring this collection, gather or choose values for the following parameters:

   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **Columns to Collect**: Choose **All** to use all of the possible fields from Logger or **Most used**, which includes only the most significant and mandatory fields. Choosing **Most used** decreases the load placed on Logger and works better for busy Logger installations.
   - **Arcsight Loggers Host Names List**: Determine the fully-qualified domain names of all of the Logger hosts from which you plan to collect log data.
   - **Skip Validation**: Select this check box if you want to create a collection without validating that it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.

   The following fields are used in the Log Analytics (Logger) Collection depending on the fields you select during configuration:

   Fields used when selecting All:`startTime agentAddress agentHostName agentNtDomain agentSeverity agentType agentZone agentZoneName agentZoneResource agentZoneURI applicationProtocol baseEventCount bytesIn bytesOut categoryBehavior categoryDeviceGroup categoryObject categoryOutcome categoryTechnique`

```
categorySignificance customerName destinationAddress destinationDnsDomain
destinationHostName destinationMacAddress destinationNtDomain destinationPort
destinationProcessName destinationServiceName destinationTranslatedAddress
destinationUserId destinationUserName destinationUserPrivileges destinationZone
destinationZoneName destinationZoneResource deviceAction deviceAddress
deviceCustomDate1 deviceCustomDate1Label deviceCustomDate2
deviceCustomDate2Label deviceCustomNumber1 deviceCustomNumber1Label
deviceCustomNumber2 deviceCustomNumber2Label deviceCustomNumber3
deviceCustomNumber3Label deviceCustomString1 deviceCustomString1Label
deviceCustomString2 deviceCustomString2Label deviceCustomString3
deviceCustomString3Label deviceCustomString4 deviceCustomString4Label
deviceCustomString5 deviceCustomString5Label deviceCustomString6
deviceCustomString6Label deviceEventCategory deviceEventClassId
deviceExternalId deviceHostName deviceInboundInterface deviceOutboundInterface
deviceProduct deviceReceiptTime deviceSeverity deviceVendor deviceVersion
deviceZone deviceZoneName deviceZoneResource deviceZoneURI endTime eventId
eventTime externalId fileName filePath flexDate1 flexDate1Label flexNumber1
flexNumber1Label flexNumber2 flexNumber2Label flexString1 flexString1Label
flexString2 flexString2Label id message name peerName priority receiver
requestClientApplication requestContext requestMethod requestUrl
requestUrlFileName requestUrlQuery rowId sessionId sourceAddress sourceHostName
sourceMacAddress sourceNtDomain sourcePort sourceProcessName sourceServiceName
sourceTranslatedAddress sourceUserId sourceUserName sourceUserPrivileges
sourceZone sourceZoneName sourceZoneResource sourceZoneURI transportProtocol
type vulnerabilityExternalID vulnerabilityURI
```

Fields used when selecting Most used`agentAddress agentHostName agentNtDomain agentSeverity agentType destinationDnsDomain destinationHostName destinationMacAddress destinationNtDomain destinationPort destinationProcessName destinationUserId destinationUserName deviceAddress deviceEventCategory deviceHostName deviceProduct deviceReceiptTime deviceSeverity deviceVendor deviceVersion endTime eventId eventTime message name peerName priority requestMethod rowId sourceAddress sourceHostName sourceMacAddress sourceNtDomain sourcePort sourceProcessName startTime type`

2. Complete the Configuration

   a. If the R language Pack from Vertica is not installed on the Vertica application, follow the appropriate instructions located in the Operations Analytics Installation Guide to install the R Language Pack from Vertica.

   Note: To determine if the R Language Pack from Vertica is installed successfully, do the following:

   i. Run the following command on the Vertica server as a dbadmin or root user to determine if the R Language Pack is installed: `rpm -qa vertica-R-lang`

ii. To determine if the required R functions exist, do the following:

A. Connect to the Vertica server console as an OpsA database user (usually the dbadmin user).

B. Run the `vsql` command.

C. When prompted, enter the database password.

D. Enter the following query: `SELECT * FROM "v_catalog"."user_functions"`

E. Check that the `gammaCDF` and `gammaMLE` functions appear in the **function_name** column.

b. Enter your selections into the **Collections Manager** dialogue.

c. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

3. Validate the Collection Results

You are now ready to use the Log Analytics (Logger) collection and the Log Analytics feature. See "Log Analytics" on page 39 for more information.

How to Configure an NNM iSPI Performance for Metrics Component Collection

Use the information in this section when configuring an NNM iSPI Performance for Metrics Component Collection.

1. Collect the Parameters

Collector Host: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.

2. Collect Data

This collection relies on data being collected from the `/opt/HP/opsa/data/netcomponent` directory. Follow the instructions below for mounting this directory:

For the Collector Appliance to access raw metric information from the NNM iSPI Performance for Metric's component health extension pack, you must export these metrics to CSV files. Run the following command on the NNM iSPI Performance for Metric server to export these metrics to CSV files in the `/csvexports` directory:

- *Windows (Raw Information)*:
  `<Install_Dir>\NNMPerformanceSPI\bin\configureCsvExport.ovpl -p Component_Health -a "Raw,<Target-Dir>"`

- *UNIX: (Raw Information)*: `/opt/OV/NNMPerformanceSPI/bin/configureCsvExport.ovpl -p Component_Health -a "Raw,<Target-Dir>"`

Note: You must make the exported component health metrics available on the OpsA Collector Appliance in the `/opt/HP/opsa/data/netcomponent` directory.

If you want to use a different directory than `/opt/HP/opsa/data/netcomponent`, do the following:

a. Edit the following collection template: `/opt/HP/opsa/conf/collection/server/config.templates/nnmispi/1.0/netcomponent/component/nnmispi_netcomponent_component_collection.xml`.

b. Specify a different directory for the `sourcedir` attribute.

Note: The `opsa` user on the OpsA Collector Appliance must have read and write access to the component health metric files in theOpsA Collector Appliance to move them to the processed directory. The default process directory is `/opt/HP/opsa/data/netcomponent_processed`.

For example, to configure read and write access to the component health metric files to the OpsA Collector Appliance when the files are located on a Windows server, do the following:

a. On a Windows server, navigate to **Computer Management** > **System Tools** > **Shares** > **Shared Folders**.

b. Right-click beneath shares and open the new share wizard.

c. Create shares for the directories in which the .csv files are stored.

d. From the OpsA Collector Appliance, add the correct entries to the `/etc/fstab` file. Use the following entries as a model:

```
//10.17.18.19/final /opt/HP/opsa/data/nnm cifs
username=administrator,password=password,uid=opsa,rw 0 0
//10.15.14.13/componentfinal /opt/HP/opsa/data/netcomponent cifs
username=admin,password=passwd,uid=opsa,rw 0 0
//10.15.14.13/interfacefinal /opt/HP/opsa/data/netinterface cifs
username=admin,password=passwd,uid=opsa,rw 0 0
```

e. Use the `mount -a` command to get the directories mounted.

3. Complete the Configuration

After you complete the steps in this section, the NNM iSPI Performance for Metrics Component Collection reads data from the CSV files within 60 seconds of the file being placed in the source directory.

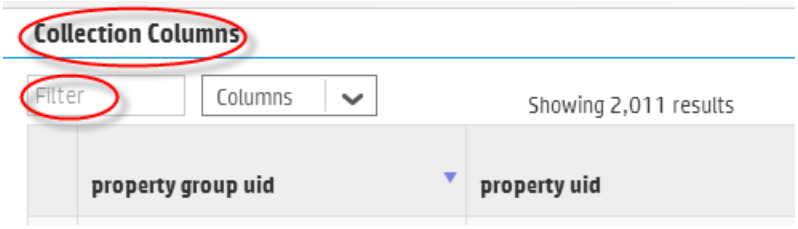
a. Enter the parameters into the **Collections Manager** dialogue.

b. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

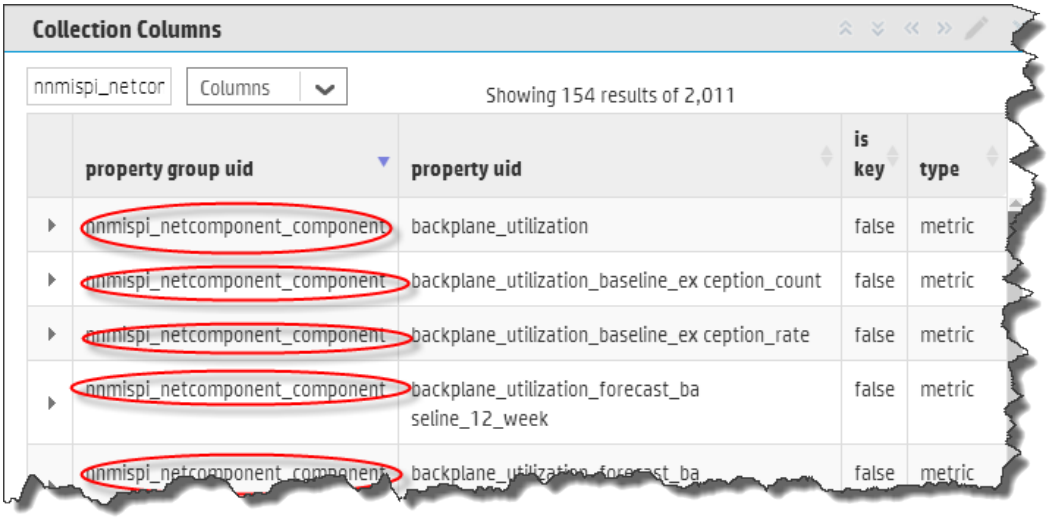
4. Validate the Collection Results

Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.

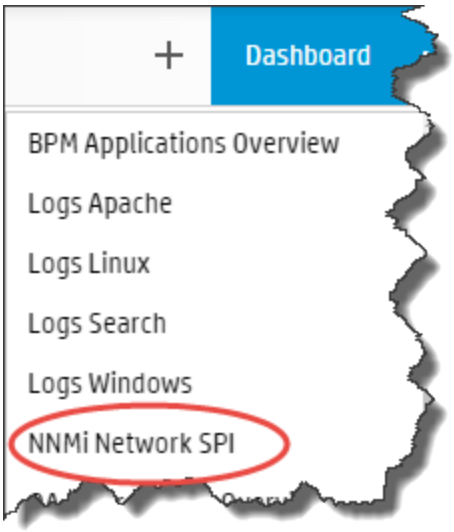
a. Type the property group uid (`nnmispi_netcomponent_component`) for this collection in the **Collection Columns Filter:**



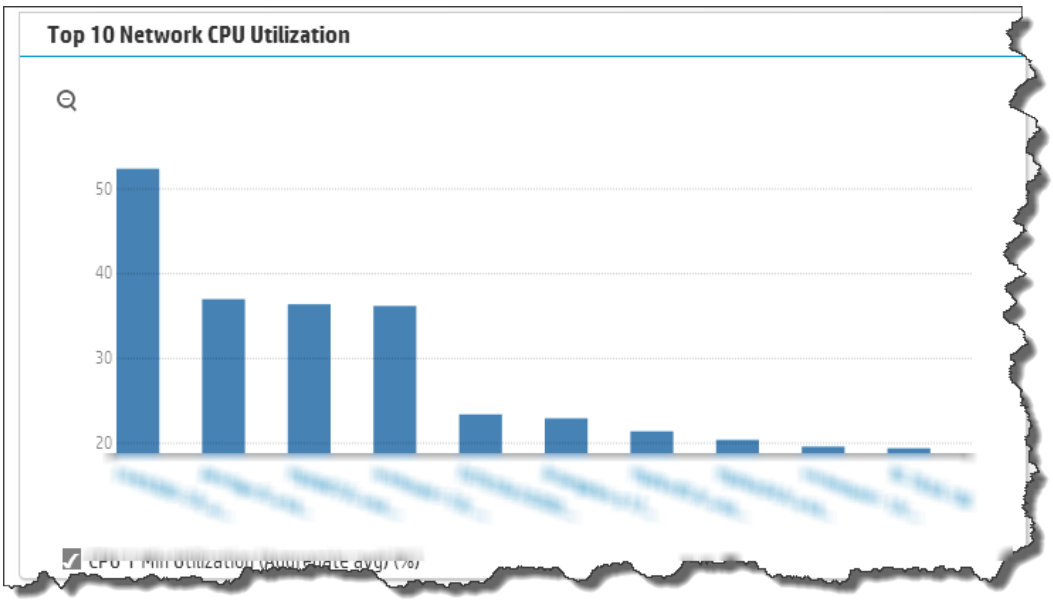
b. After typing property group uid (`nnmispi_netcomponent_component`) for this collection in the **Collection Columns Filter**, you should see information for this collection.



c. From the OpsA console, open the **NNMi Network SPI** dashboard to view some of the collected information for this collection:



The following is a small example of NNM iSPI Performance for Metrics Component Collection data provided by the **NNMi Network SPI** dashboard.



5. Next Steps

   a. Create AQL functions for the data you are now collecting. See the instructions shown in the *Define Analytic Query Language (AQL) Functions* section of the AQL Developer Guide for more information.

   b. If you want to add tags to an NNM iSPI Performance for Metrics Component Collection, use the opsa-tag-manager.sh command. See *Creating, Applying, and Maintaining Tags* in the

Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure an NNM iSPI Performance for Metrics Interface Collection

Use the information in this section when configuring an NNM iSPI Performance for Metrics Interface Collection.

1. Collect the Parameters

   Collector Host: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.

2. Collect Data

   This collection relies on data being collected from the `/opt/HP/opsa/data/netinterface` directory. Follow the instructions below for mounting this directory:

   For the Collector Appliance to access live metric information from the NNM iSPI Performance for Metric's interface health extension pack, you must export these metrics to CSV files. Run the following command on the NNM iSPI Performance for Metric server to export these metrics to CSV files in the `/csvexports` directory:

   - *Windows (Raw Information)*:
     `<Install_Dir>\NNMPerformanceSPI\bin\configureCsvExport.ovpl -p Interface_Health -a "Raw,<Target_Directory">`
   - *UNIX (Raw Information*):
     `/opt/OV/NNMPerformanceSPI/bin/configureCsvExport.ovpl -p Interface_Health -a "Raw,<Target_Directory">`

   Note: You must make the exported interface health metrics available on theOpsA Collector Appliance in the `/opt/HP/opsa/data/netinterface` directory.
   If you want to use a different directory than `/opt/HP/opsa/data/netinterface`, do the following:

   a. Edit the following collection template:
      `/opt/HP/opsa/conf/collection/server/config.templates/nnmispi/1.0/netinterface/interface/nnmispi_netinterface_interface_collection.xml`.

   b. Specify a different directory for the `sourcedir` attribute.

   Note: The `opsa` user on the OpsA Collector Appliance must have read and write access to the interface health metric files in the OpsA Collector Appliance to move them to the processed directory. The default process directory is `/opt/HP/opsa/data/netinterface_`

processed.

For example, to configure read and write access to the interface health metric files to the OpsA Collector Appliance when the files are located on a Windows server, do the following:

a. On a Windows server, navigate to **Computer Management** > **System Tools** > **Shares** > **Shared Folders**.

b. Right-click beneath shares and open the new share wizard.

c. Create shares for the directories in which the .csv files are stored.

d. From the OpsA Collector Appliance, add the correct entries to the `/etc/fstab` file. Use the following entries as a model:

```
//10.17.18.19/final /opt/HP/opsa/data/nnm cifs
username=administrator,password=password,uid=opsa,rw 0 0
//10.15.14.13/componentfinal /opt/HP/opsa/data/netcomponent cifs
username=admin,password=passwd,uid=opsa,rw 0 0
//10.15.14.13/interfacefinal /opt/HP/opsa/data/netinterface cifs
username=admin,password=passwd,uid=opsa,rw 0 0
```

e. Use the `mount -a` command to get the directories mounted.

3. Complete the Configuration

   After you complete the steps in this section, the NNM iSPI Performance for Metrics Interface Collection reads data from the CSV files within 60 seconds of the file being placed in the source directory.

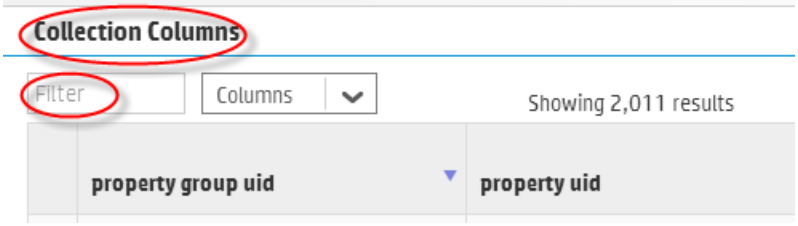
   a. Enter the parameters into the **Collections Manager** dialogue.

   b. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

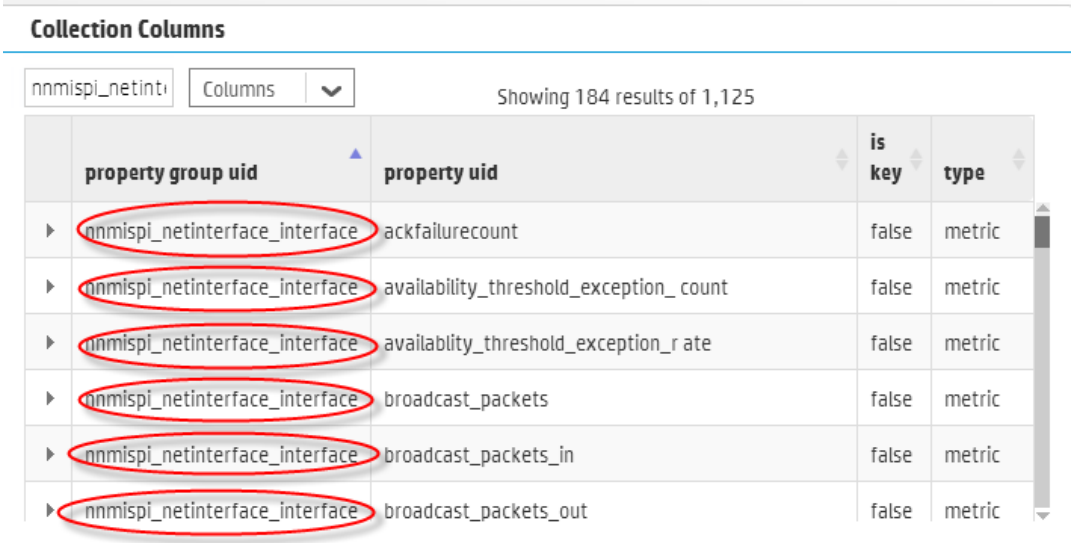
4. Validate the Collection Results

   Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.

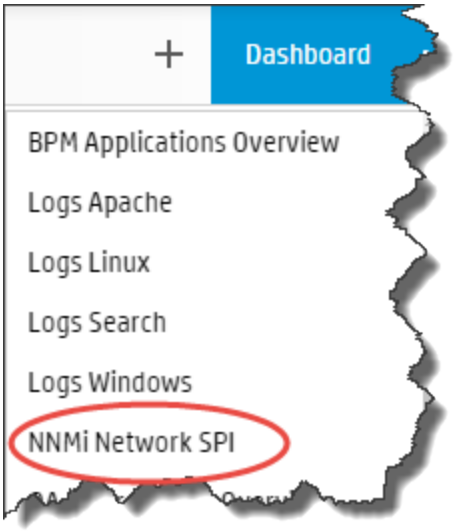
   a. Type the property group uid (`nnmispi_netinterface_interface`) for this collection in the **Collection ColumnsFilter:**



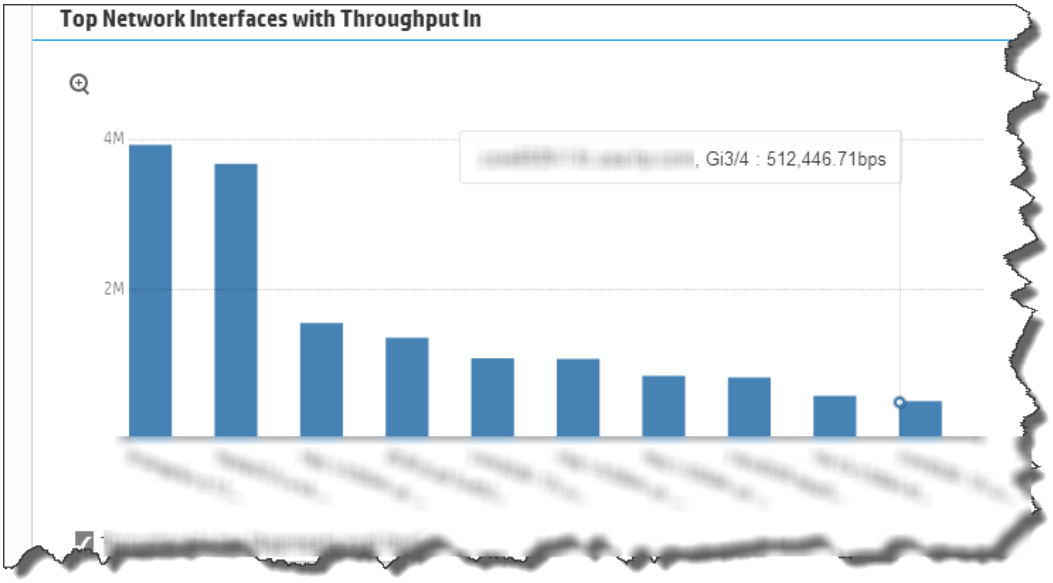
b. After typing the property group uid (`nnmispi_netinterface_interface`) for this collection in **Collection ColumnsFilter**, you should see information in the resulting table:



c. From the OpsA console, open the **NNMi Network SPI** dashboard to view some of the collected information for this collection:



The following is a small example of NNM iSPI Performance for Metrics Interface data provided by the **NNMi Network SPI** dashboard.



5. Next Steps

   a. Create AQL functions for the data you are now collecting. See the instructions shown in the *Define Analytic Query Language (AQL) Functions* section of the AQL Developer Guide for more information.

   b. If you want to add tags to an NNM iSPI Performance for Metrics Interface Collection, use the opsa-tag-manager.sh command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure an NNMi Custom Poller Collection

Use the information in this section when configuring an NNMi Custom Poller Collection.

1. Collect the Parameters

   Collector Host: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.

2. Collect Data

   The NNMi Custom Poller Collection collects data from the `/opt/HP/opsa/data/nnm` directory. To enable NNMi to export Custom Poller collections, do the following:

   a. Using the NNMi console, enable NNMi to export custom poller collections to make the metrics from your collections available for OpsA . Configuring NNMi to export custom poller

collections enables NNMi to export metrics, such as CSV files, into the following directory:

- *Windows*:
  `<Install_Dir>\ProgramData\HP\HP BTO Software\shared\nnm\databases\custompoller\export\final`
- *UNIX*:
  `/var/opt/OV/shared/nnm/databases/custompoller/export/final`

See the *HP Network Node Manager i Deployment Reference*, the *HP NNMi Help*, or the *HP Network Node Manager i Software Step-by-Step Guide to Custom Poller White Paper* for more information.

b. The default configuration for the custom poller collection template is for OpsA to read all of the files having file names that match the `*.csv*` or `*.gz*` pattern. If you need the collector to read a different set of files, the OpsA administrator must edit the appropriate custom poller collector template file and specify a different file pattern. To change the pattern, edit the custom poller collection template and make the value changes you must make to the `filepattern=` tag.

Note: You must make the files exported from the `/var/opt/OV/shared/nnm/databases/custompoller/export/final` directory on NNMi available on the OpsA Collector Appliance in the `/opt/HP/opsa/data/nnm` directory.

If you want to use a different directory than `/opt/HP/opsa/data/nnm`, do the following:

a. Edit the following collection template:
`/opt/HP/opsa/conf/collection/server/config.templates/nnm/1.0/netperf/mib/nnm_netperf_mib_collection.xml`.

b. Specify a different directory for the `sourcedir` attribute.

Note: The `opsa` user on the OpsA Collector Appliance must have read and write access to the NNMi files on the OpsA Collector Appliance to move them to the processed directory. The default process directory is `/opt/HP/opsa/data/nnm_processed`.

For example, to configure read and write access to the NNMi files to the OpsA Collector Appliance when the files are located on a Windows server, do the following:

a. On a Windows server, navigate to **Computer Management** > **System Tools** > **Shares** > **Shared Folders**.

b. Right-click beneath shares and open the new share wizard.

c. Create shares for the directories in which the .csv files are stored.

d. From the OpsA Collector Appliance, add the correct entries to the `/etc/fstab` file. Use the following entries as a model:

```
//10.17.18.19/final /opt/HP/opsa/data/nnm cifs
username=administrator,password=password,uid=opsa,rw 0 0
//10.15.14.13/componentfinal /opt/HP/opsa/data/netcomponent cifs
username=admin,password=passwd,uid=opsa,rw 0 0
//10.15.14.13/interfacefinal /opt/HP/opsa/data/netinterface cifs
username=admin,password=passwd,uid=opsa,rw 0 0
```

e. Use the `mount -a` command to get the directories mounted.

3. Complete the Configuration

After you complete the steps in this section, the NNMi Custom Poller reads data from the CSV files within 60 seconds of the file being placed in the source directory. You can use an NNMi Custom Poller to collect numeric metrics from any NNMi Custom Poller MIB expression.

Windows: *Install_Dir*`/ProgramData/HP/HP BTO Software/shared/nnm/databases/custompoller/export/final`

UNIX: `/var/opt/OV/shared/nnm/databases/custompoller/export/final`

See the HP Network Node Manager i Deployment Reference, the HP NNMi Help, or the HP Network Node Manager i Software Step-by-Step Guide to Custom Poller White Paper for more information.

a. Using the NNMi console, enable NNMi to export custom poller collections to make the metrics from your collections available for OpsA. Configuring NNMi to export custom poller collections enables NNMi to export metrics, such as CSV files, into the following directory:

Windows: *Install_Dir*`/ProgramData/HP/HP BTO Software/shared/nnm/databases/custompoller/export/final`

UNIX: `/var/opt/OV/shared/nnm/databases/custompoller/export/final`

See the HP Network Node Manager i Deployment Reference, the HP NNMi Help, or the HP Network Node Manager i Software Step-by-Step Guide to Custom Poller White Paper for more information.

b. The default configuration for the custom poller collection template is for OpsA to read all of the files having file names that match the `*.csv*` or `*.gz*` pattern. If you need the collector to read a different set of files,the OpsA administrator must edit the appropriate custom poller collector template file and specify a different file pattern. To change the pattern, edit the custom poller collection template located at `/opt/HP/opsa/conf/collection/server/config.templates/nnm/1.0/netperf/mib/nnm_netperf_mib_collection.xml` and make the value changes you must make to the

`filepattern=` tag.

c. Enter the parameters into the **Collections Manager** dialogue.

d. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

Note: You must make the files exported from the `/var/opt/OV/shared/nnm/databases/custompoller/export/final` directory on NNMi available on the OpsA Collector Appliance in the `/opt/HP/opsa/data/nnm` directory. If you want to use a different directory than `/opt/HP/opsa/data/nnm`, do the following:

a. Edit the following collection template: `/opt/HP/opsa/conf/collection/server/config.templates/nnm/1.0/netperf/mib/nnm_netperf_mib_collection.xml`.

b. Specify a different directory for the `sourcedir` attribute.

Note: The `opsa` user on the OpsA Collector Appliance must have read and write access to the NNMi files on the OpsA Collector Appliance to move them to the processed directory. The default process directory is `/opt/HP/opsa/data/nnm_processed`. For example, to configure read and write access to the NNMi files to the OpsA Collector Appliance when the files are located on a Windows server, do the following:

a. On a Windows server, navigate to **Computer Management** > **System Tools** > **Shares** > **Shared Folders**.

b. Right-click beneath shares and open the new share wizard.

c. Create shares for the directories in which the .csv files are stored.

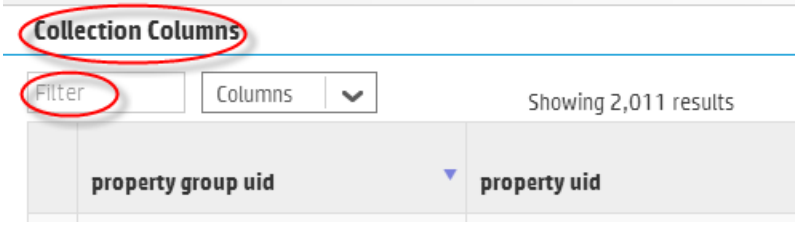
d. From the OpsA Collector Appliance, add the correct entries to the `/etc/fstab` file. Use the following entries as a model:
```
//10.17.18.19/final /opt/HP/opsa/data/nnm cifs username=administrator,password=password,uid=opsa,rw 0 0
//10.15.14.13/componentfinal /opt/HP/opsa/data/netcomponent cifs username=admin,password=passwd,uid=opsa,rw 0 0
//10.15.14.13/interfacefinal /opt/HP/opsa/data/netinterface cifs username=admin,password=passwd,uid=opsa,rw 0 0
```

e. Use the `mount -a` command to get the directories mounted.

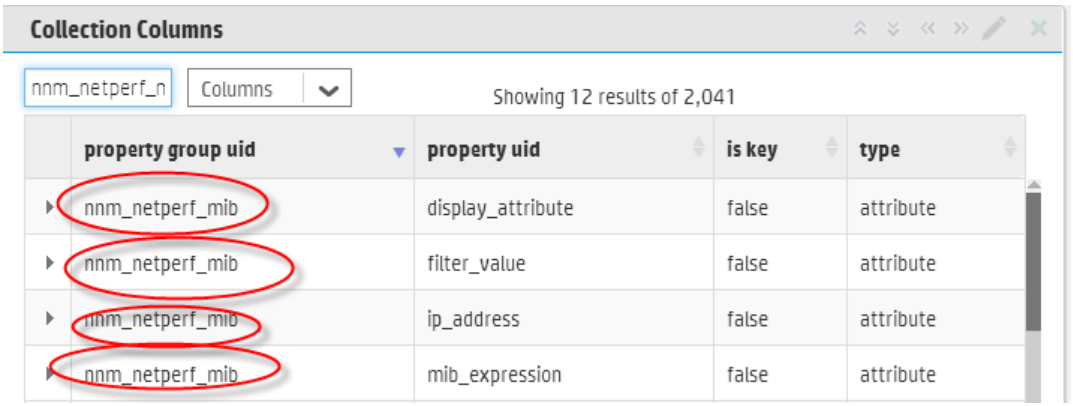
4. Validate the Collection Results

Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.

a. Type the property group uid (`nnm_netperf_mib`) for this collection in the **Collection Columns Filter:**



b. After typing property group uid (`nnm_netperf_mib`) for this collection in the **Collection Columns Filter**, you should see information for this collection.



5. Next Steps

a. Create dashboards and query panes for the data you are now collecting. See "Dashboards and Query Panes" on page 11 for more information.

b. Create AQL functions for the data you are now collecting. See the instructions shown in the *Define Analytic Query Language (AQL) Functions* section of the AQL Developer Guide for more information.

c. If you want to add tags to an HP NNMi Custom Poller, use the opsa-tag-manager.sh command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure an Operations Agent Collection

Use the information in this section when configuring an Operations Agent Collection.

1. Collect the Parameters

- **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.

- **Agents List**: Determine the fully-qualified domain names of the OA servers from which you need to collect data.
- **Skip Validation**: Select this check box if you want to create a collection without validating that it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.

2. Complete the Configuration:

   The Operations Agent Collection collects global system information on the host that is running the Operations Agent. After you complete the steps in this section, the Operations Agent Collection collects raw metrics every 15 minutes, with 5 minute data granularity.

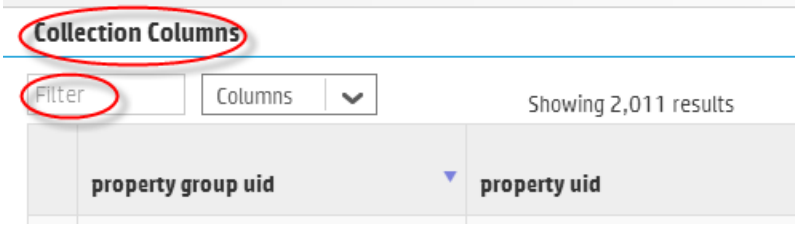
   a. Enter the parameters into the **Collections Manager** dialogue.

   b. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

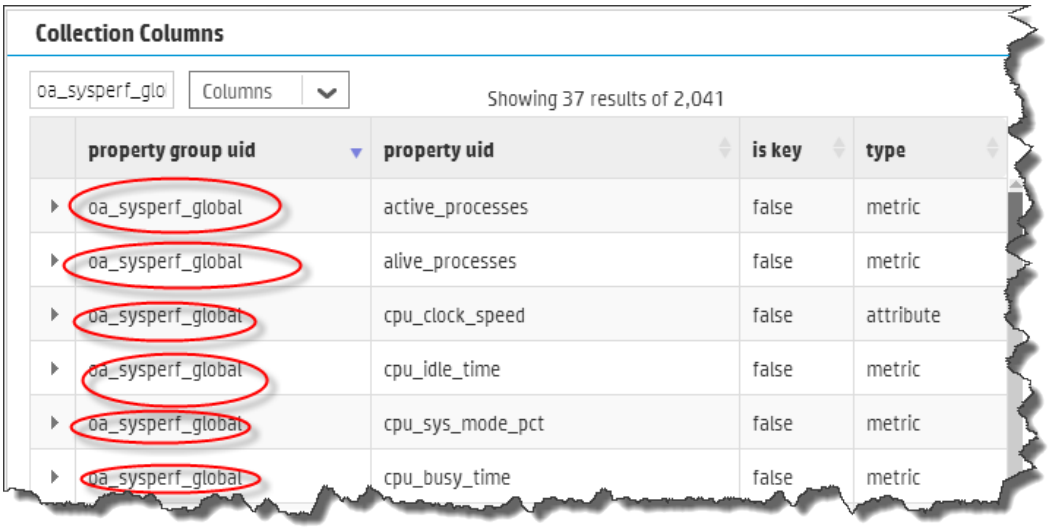
3. Validate the Collection Results

   Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.

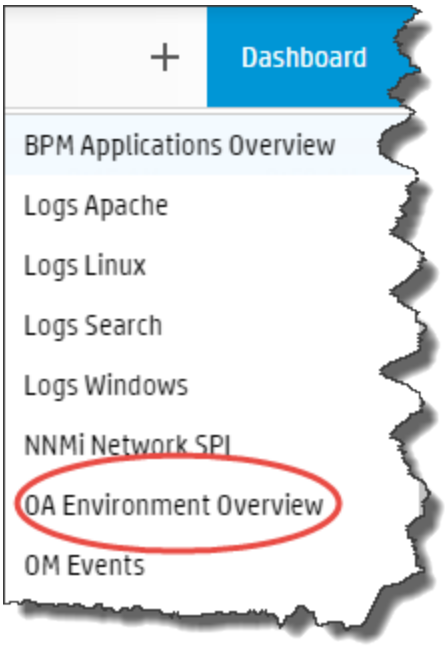
   a. Type the property group uid (`oa_sysperf_global`) for this collection in the **Collection Columns Filter:**



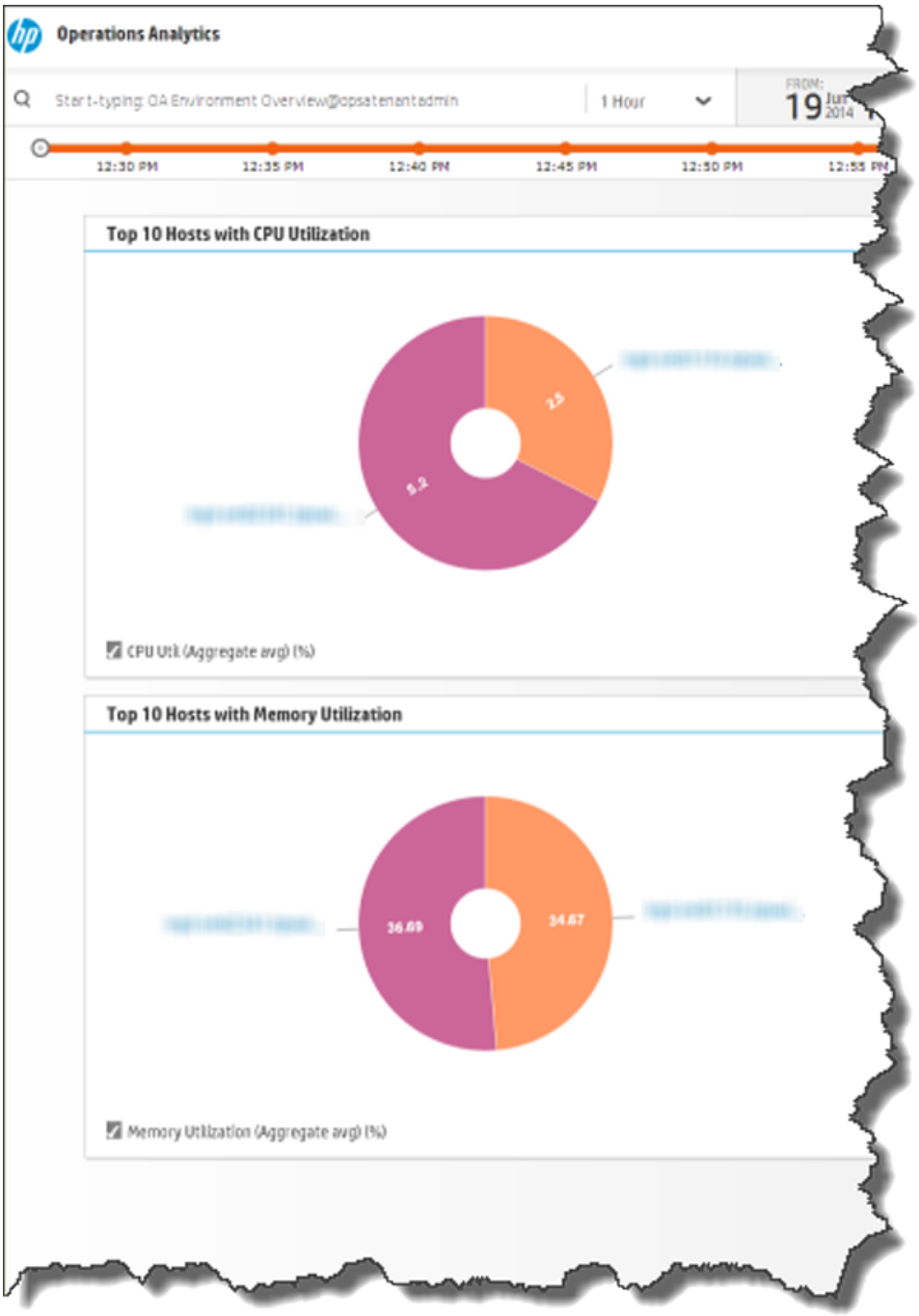
   b. After typing property group uid (`oa_sysperf_global`) for this collection in the **Collection Columns Filter**, you should see information for this collection.



c. From the OpsA Console, open the **OA Environment Overview** dashboard to view some of the collected information for this collection:



The following is a small sample of Operations Agent Collection data provided by the **OA Environment Overview** dashboard.



4. Next Steps

   If you want to add tags to an Operations Agent Collection, use the `opsa-tag-manager.sh` command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure an Operations Manager Events (Unix) Collection

Use the information in this section when configuring an Operations Manager Events (Unix) Collection.

Note: To support this collection using Oracle RAC, do the following:

1. Copy the `tnsnames.ora` file from the Oracle server to the following locations:

   OpsA Server: `/opt/HP/opsa/conf/collection/tnsnames.ora`

   OpsA Collector: `/opt/HP/BSM/PMDB/config/tnsnames.ora`

2. Rename the `tnsnames.ora` files:

   OpsA Server: `/opt/HP/opsa/conf/collection/bsm-tnsnames.ora`

   OpsA Collector: `/opt/HP/BSM/PMDB/config/bsm-tnsnames.ora`

1. Collect the Parameters
   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **Database Host Name**: Determine the fully-qualified domain name for the server housing the HPOM database.
   - **Database Type**: `ORACLE`.
   - **Database Port**: Determine the port number to use for accessing the HPOM server (the default port is `1521`).
   - **Database User Name**: Determine the HPOM user name (the default is opc_op). This is the user name to use for connecting to the HPOM database. This is a database user not a system or HPOM application user.
   - **Database Password**: Determine the password for the HPOM user name. This is the password OpsA uses to connect (using JDBC) to fetch the events directly from the HPOM schema.
   - **Database Instance Name**: Determine the instance name of the OM database (the default is `openview`). If you are using Oracle RAC, use the service name in this field.
   - **Database Name**: Determine the HPOM database name.
   - **Skip Validation**: Select this check box if you want to create a collection without validating that it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.
2. Complete the Configuration

After you complete the steps in this section, the Operations Manager Events (Unix) Collection collects events every 15 minutes, and collects all OM events that occurred since the last poll.

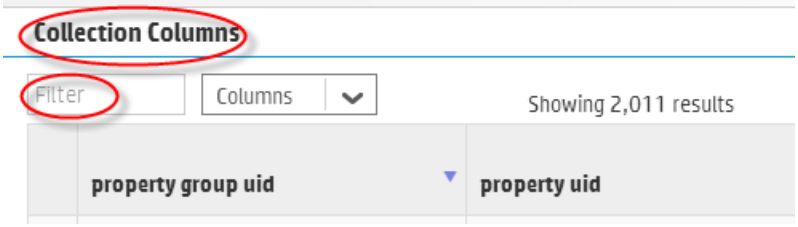
a. Enter the parameters into the **Collections Manager** dialogue.

b. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

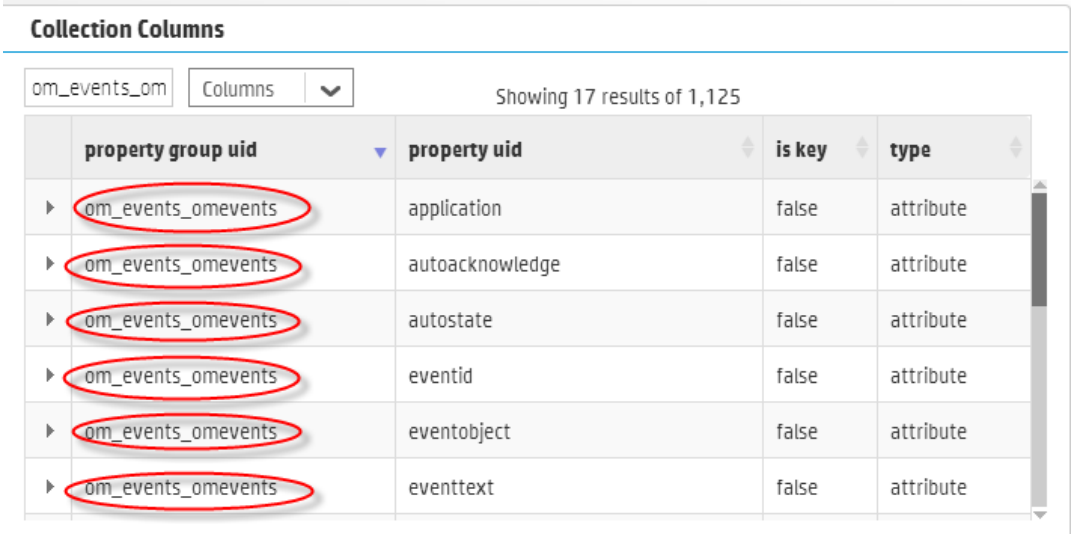
3. Validate the Collection Results

Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.

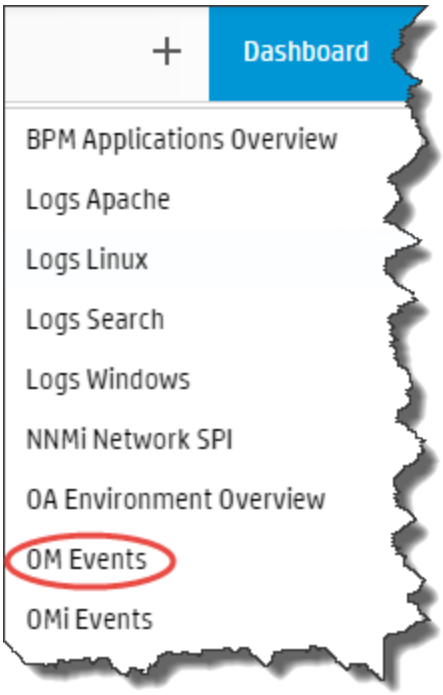
a. Type the property group uid (`om_events_omevents`) for this collection in the **Collection ColumnsFilter:**



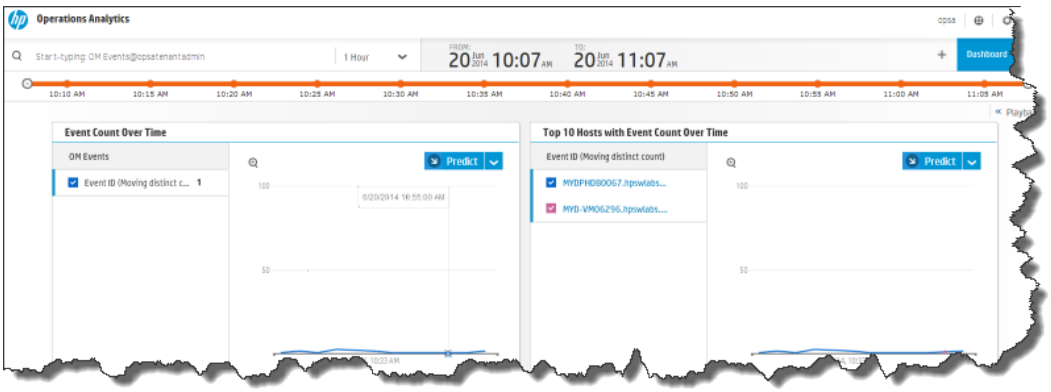
b. After typing property group uid (`om_events_omevents`) for this collection in the **Collection Columns Filter**, you should see information for this collection.



c. From the OpsA Console, open the **OM Events** dashboard to view some of the collected information for this collection:



The following is a small sample of OM Events Collection data provided by the **OM Events** dashboard.



4. Next Steps

   If you want to add tags to an Operations Manager Events (Unix) Collection, use the `opsa-tag-manager.sh` command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information..

How to Configure an Operations Manager Events (Windows) Collection

Use the information in this section when configuring an Operations Manager Events (Windows) Collection.

Note: To support this collection using Oracle RAC, do the following:

1. Copy the `tnsnames.ora` file from the Oracle server to the following locations:

   OpsA Server: `/opt/HP/opsa/conf/collection/tnsnames.ora`

   OpsA Collector: `/opt/HP/BSM/PMDB/config/tnsnames.ora`

2. Rename the `tnsnames.ora` files:

   OpsA Server: `/opt/HP/opsa/conf/collection/bsm-tnsnames.ora`

   OpsA Collector: `/opt/HP/BSM/PMDB/config/bsm-tnsnames.ora`

1. Collect the Parameters

   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **Database Host Name**: Determine the fully-qualified domain name for the server housing the HPOM database.
   - **Database Type**: `MSSQL`.
   - **Database Port**: Determine the port number to use for accessing the HPOM server (the default port is `1433` for SQL).
   - **Database User Name**: The user name to use for connecting to the HPOM server. This is the user name to use for connecting to the HPOM database. See *Configuring HP Operations Manager (HPOM) (Creating a Database User Account on an HPOM Database Server)* in the Operations Analytics Configuration Guide for specific instructions about creating this user. This is a database user, not a system or HPOM application user.
   - **Database Password**: Determine the password for the HPOM user name. This is the password OpsA uses to connect (using JDBC) to fetch the events directly from the HPOM schema.
   - **Database Instance Name**:Determine the instance name of the OM database (the default is `OVOPS`). If you are using Oracle RAC, use the service name in this field.
   - **Database Name**: Determine the HPOM database name.
   - **Skip Validation**: Select this check box if you want to create a collection without validating that

it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.

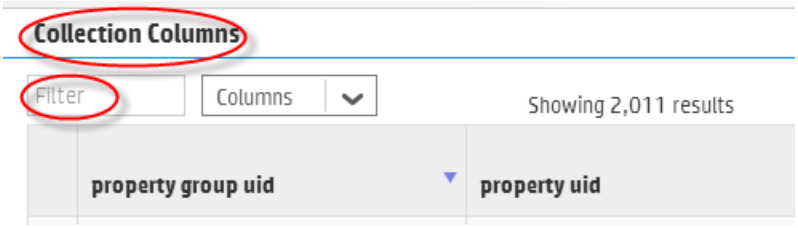
2. Complete the Configuration

   a. Enter the parameters into the **Collections Manager** dialogue.

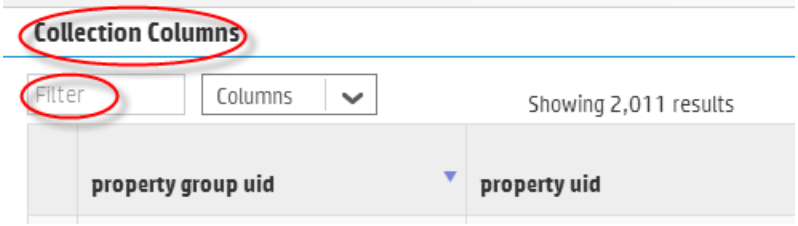
   b. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

3. Validate the Collection Results

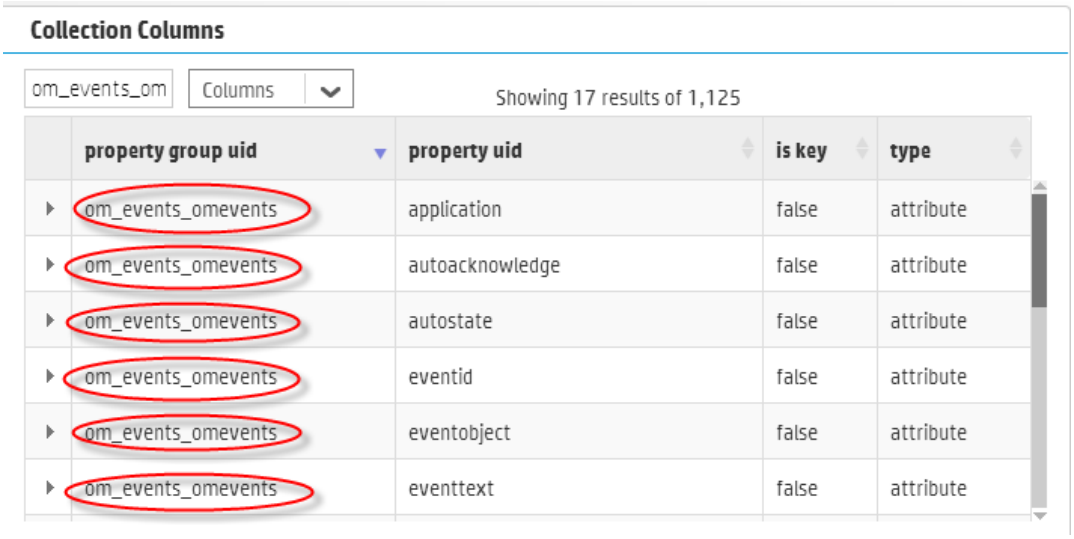
Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.



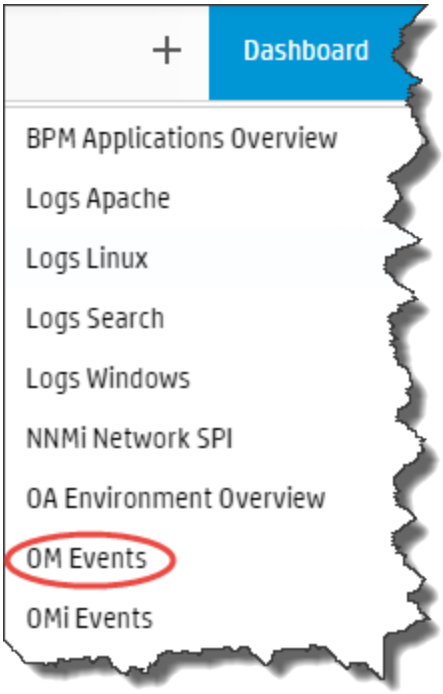
   a. Type the property group uid (`om_events_omevents`) for this collection in the **Collection ColumnsFilter:**



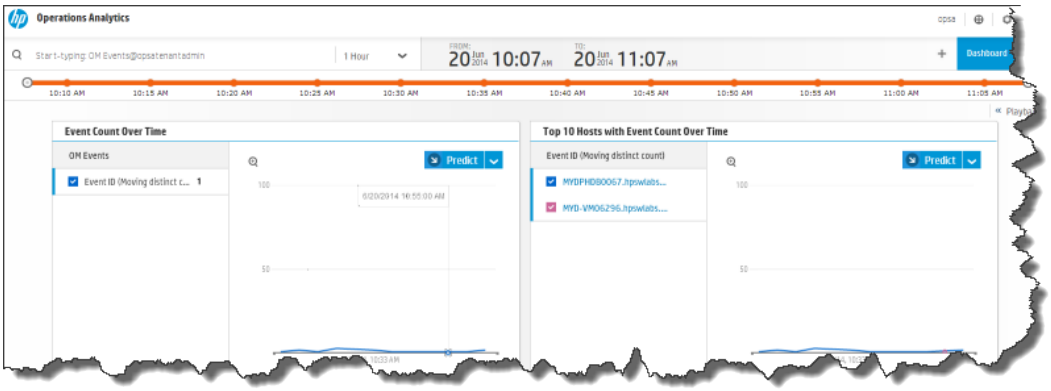
   b. After typing property group uid (`om_events_omevents`) for this collection in the **Collection Columns Filter**, you should see information for this collection.



c. From the OpsA Console, open the **OM Events** dashboard to view some of the collected information for this collection:



The following is a small sample of Operations Manager Events (Windows) Collection data provided by the **OM Events** dashboard.



4. Next Steps

   If you want to add tags to an Operations Manager Events (Windows) Collection, use the `opsa-tag-manager.sh` command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure an Operations Manager i Events Collection

Use the information in this section when configuring an Operations Manager i Events Events Collection.

Note: To support this collection using Oracle RAC, do the following:

1. Copy the `tnsnames.ora` file from the Oracle server to the following locations:

   OpsA Server: `/opt/HP/opsa/conf/collection/tnsnames.ora`

   OpsA Collector: `/opt/HP/BSM/PMDB/config/tnsnames.ora`

2. Rename the `tnsnames.ora` files:

   OpsA Server: `/opt/HP/opsa/conf/collection/bsm-tnsnames.ora`

   OpsA Collector: `/opt/HP/BSM/PMDB/config/bsm-tnsnames.ora`

1. Collect the Parameters

   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **Database Host Name**: Determine the fully-qualified domain name for the server housing the OMi database.
   - **Database Type**: Choose `ORACLE` or `MSSQL`.

- **Database Port**: Determine the port number to use for accessing the OMi database.

  Note: The default port is `1433`, which is suitable for accessing most MS MQL Server installations. Oracle typically uses port 1521.

- **Database User Name**: The name of a database user that has READ access to the OMi/Event Management schema in BSM. This is a database user, not a system user. Check with your BSM administrator or the database administration staff for the proper credentials.

- **Database Password**: Determine the password for the OMi database username (the default is `Omi`). This is the password OpsA uses to connect (using JDBC) to fetch the events directly from the OMi schema. This is a database password, not a system password.

- **Database Instance Name**: Determine the instance name of the OMi database. If you are using Oracle RAC, use the service name in this field.

- **Database Name**: Determine the OMi database name (the default is `OMi`).

- **Skip Validation**: Select this check box if you want to create a collection without validating that it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.

2. Complete the Configuration

   After you complete the steps in this section, the Operations Manager i Events Collection collects events every 15 minutes, and collects all OMi events that occurred since the last poll.

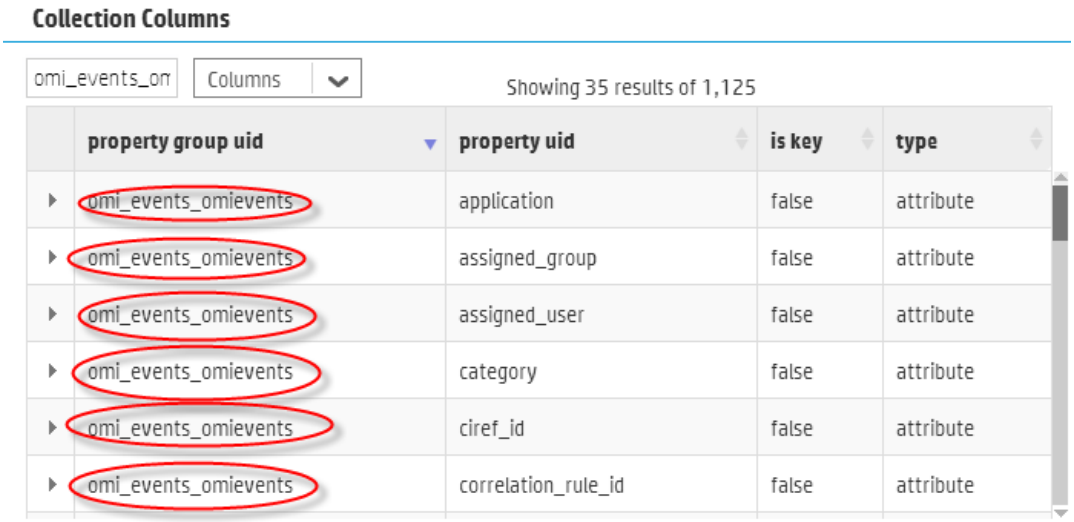
   a. Enter the parameters into the **Collections Manager** dialogue.

   b. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

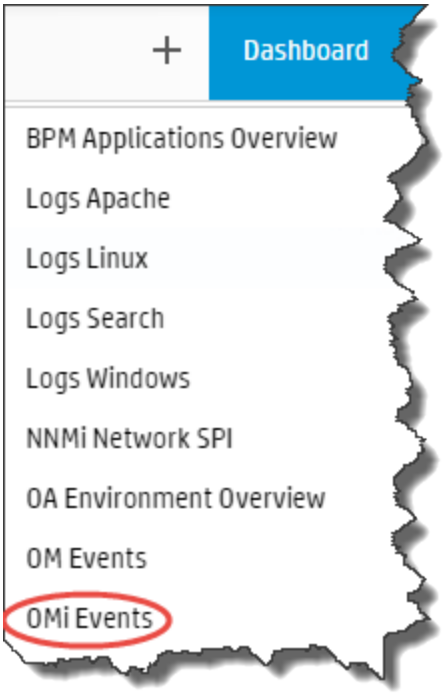
3. Validate the Collection Results

   Let the collection run for five minutes or longer. From the OpsA Console, view the dashboard. Look for the **property group uid** for the collection you just created and published.

   a. After typing property group uid (`omi_events_omievents`) for this collection in the **Collection ColumnsFilter**, you should see information for this collection.



b. From the OpsA Console, open the **OMi Events** dashboard to view some of the collected information for this collection:



4. Next Steps

   If you want to add tags to an Operations Manager i Events Collection, use the `opsa-tag-manager.sh` command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure an Operations SPI for Oracle Collection

Use the information in this section when configuring an Operations SPI for Oracle Collection.

1. Collect the Parameters

   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **Agents List**: Determine the fully-qualified domain names of the OA servers from which you need to collect data.
   - **Skip Validation**: Select this check box if you want to create a collection without validating that it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.

2. Complete the Configuration

   After you complete the steps in this section, the Operations SPI for Oracle Collection collects metrics every 15 minutes, with 5 minute data granularity.

   a. Check that the HP Operations Smart Plug-in for Oracle is deployed correctly, that it is running on the agent, and that metrics exist.

   b. Enter the parameters into the **Collections Manager** dialogue.

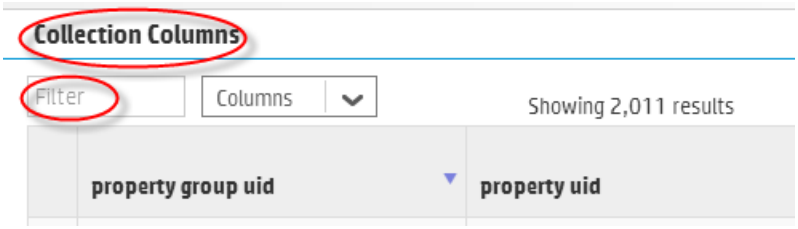
   c. Click **Create Collection** to create and publish a new collection or **Override Collection** to modify an existing collection.

3. Validate the Collection Results

   Let the collection run for five minutes or longer. From the OpsA Console, view the **OpsA Meta Info** dashboard. Look for the **property group uid** for the collection you just created and published.

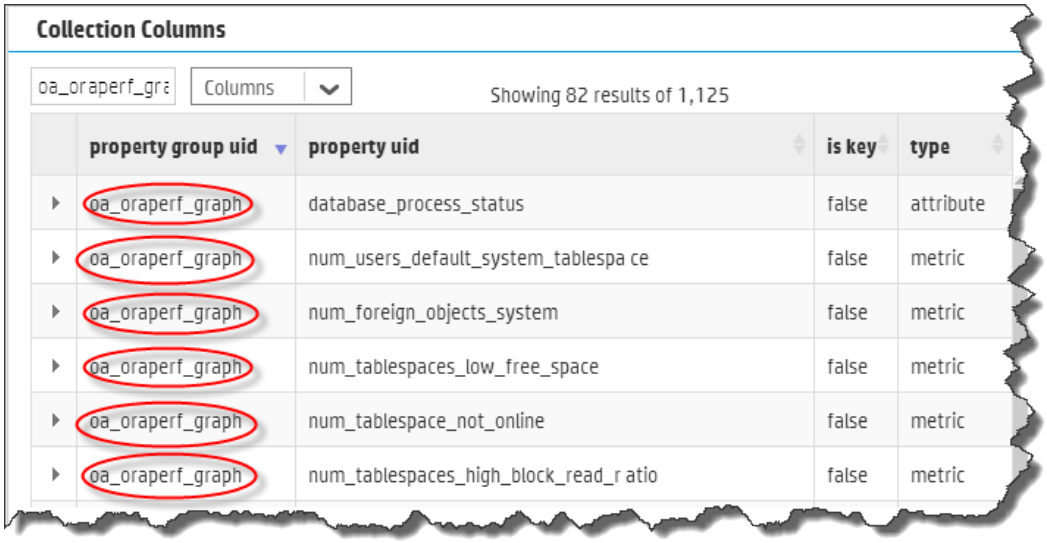
   After typing property group uid (`oa_oraperf_graph`) for this collection in the **Collection Columns Filter**, you should see some information similar to the following for this collection:

   a. Type the property group uid (`oa_oraperf_graph`) for this collection in the **Collection ColumnsFilter**:



   b. After typing property group uid (`oa_oraperf_graph`) for this collection in the **Collection**

Columns Filter, you should see some information similar to the following for this collection:



4. Next Steps

   a. Create dashboards and query panes for the data you are now collecting. See "Dashboards and Query Panes" on page 11 for more information.

   b. Create AQL functions for the data you are now collecting. See the instructions shown in the *Define Analytic Query Language (AQL) Functions* section of the AQL Developer Guide for more information.

   c. If you want to add tags to an Operations SPI for Oracle Collection, use the opsa-tag-manager.sh command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure a SiteScope Collection

Use the information in this section when configuring a SiteScope Collection.

Note: See *Supported Monitor Types* in the Operations Analytics Configuration Guide for a list of supported SiteScope monitor types. If a SiteScope monitor type has only unsupported counters configured, OpsA ignores that monitor type when creating the collection. OpsA does not support monitor counter names longer than 128 characters. If a supported monitor's counter name is longer than 128 characters, OpsA ignores that counter.

Note: Configuring the Custom SiteScope Collection by using the Collections Manager as described in this section automatically tags the root group in SiteScope in a way that data from all monitors will be sent to Operations Analytics.

If you want to manually select (tag) the monitors from which to receive data, (instead of using the Configuration Manager in the OpsA console), you must do the following:

1. Follow the instructions in the *Configuring a Custom SiteScope Collection (Detailed Method)* section in the *Operations Analytics Configuration Guide* and use the `-ignoretag` option when running the `opsa-sis-collector-auto-conf.sh` script.
2. Follow the steps in the *Configuring SiteScope for Integrating Data with Operations Analytics (Manual Method)* section in the *Operations Analytics Configuration Guide* to manually tag the integration and the desired monitors.

1. Collect the Parameters
   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that collects data from the SiteScope servers.
   - **Use IP**: Select this option for networks that only permit the SiteScope server to connect to the OpsA collector using the OpsA Collector's IP address (and not its hostname).
   - **SiteScope Server**: Determine the IP address or fully-qualified domain name of the SiteScope server for which you are configuring collections.
   - **SiteScope Port** : Determine the port used to connect to the SiteScope server.
   - **SiteScope User Name**: Determine the user name used to connect to the SiteScope server. This is typically `admin`.
   - **SiteScope Password**: Determine the user name password to use when connecting to the SiteScope server.
   - **SiteScope LWSSO Token**: Take this value from SiteScope UI > Preferences > General Preferences > LW SSO Settings > Communication security passphrase.

     Note: You cannot leave the LWSSO field empty even if you do not use SSL communication to connect to SiteScope.

   - **UOM Folder Path**: The path to the extracted UOM files.
   - **Use SSL**: Select this option if you want to enable SSL communication with the SiteScope server.
   - **Skip Validation**: Select this check box if you want to create a collection without validating that it can actually connect to the data source. This is useful for creating a collection with a non-existing data source, then manually copying data to data input folders on the OpsA collector.
2. Complete the Configuration:

After you complete the steps in this section, SiteScope starts sending data to the SiteScope Collection. The SiteScope Collection collects data as it arrives from SiteScope.

a. Enter the parameters into the **Collections Manager** dialogue.

b. Click **Create Collection** to create and publish a new collection.

> **Note:** Creating this collection takes extra time. Typically it takes 30 minutes or longer to create this collection.

3. Validate the Collection Results

   After completing the configuration steps in this section, SiteScope begins forwarding data to the OpsA Collector Appliance based on the configuration choices you made.

4. Next Steps

   a. Use the SiteScope dashboard to view the collection results.

   b. Create AQL functions for the data you are now collecting. See the instructions shown in the *Define Analytic Query Language (AQL) Functions* section of the AQL Developer Guide for more information.

   c. If you want to add tags to a Custom SiteScope Collection, use the `opsa-tag-manager.sh` command. See *Creating, Applying, and Maintaining Tags* in the Operations Analytics Configuration Guide and the *opsa-tag-manager.sh* reference page (or the Linux manpage) for more information.

How to Configure a Log Analytics (Splunk) Collection

Use the information in this section when configuring a Log Analytics (Splunk) Collection.

1. Collect the Parameters

   - **Collector Host**: Select the fully-qualified domain name or IP address of the common collector that will collect data for this collection.
   - **Splunk host name**: Determine the IP address or fully-qualified domain name of the Splunk server for which you are configuring collections.
   - **Search string**: The Splunk search string that defines which data is imported to OpsA.

   > **Note:** If you configure a Log Analytics (Splunk) Collection using the Collection Manager as well as using the opsa-collection-config.sh script (from the *HP Operations Analytics Configuration Guide*),you must use the same search string for both methods.

2. Complete the Configuration

a. Configure Log Analytics as explained in *Configuring Log Analytics* in the Operations Analytics Quick Start Guide .

b. Enter the parameters into the **Collections Manager** dialogue.

c. Click **Create Collection** to create and publish a new collection.

3. Validate the Collection Results

Let the collection run for five minutes or longer. From the OpsA Console, view the **Logs Search** dashboard. Look for the presence of Log Analytics bubbles in the pane as shown below.

Note: Hover over the bubbles in the graph to view the tooltips.

How to Unregister a Collection

When viewing the **Collections Manager** screen, notice the **Unregister** button. If you no longer want to analyze data for a collection, do the following:

1. Select the collection you want to unregister.

2. Select the **Unregister** button.

Note: Selecting this button does not drop the tables for the selected collection. If you want to completely remove a collection registration, see *Removing a Collection Registration for a Tenant* in the HP Operations Analytics Configuration Guide .

Note: To view information about an existing collection, select one of the existing collections from the **Collections Manager**, then click **View Instance**.

Chapter 13: Operations Analytics Integration with HP OneView

The information in this section is useful If you configured the OpsA - OneView integration. See the *Operations Analtyics - OneView Integration Guide* for more information.

Summary of the the OpsA - OneView integration.

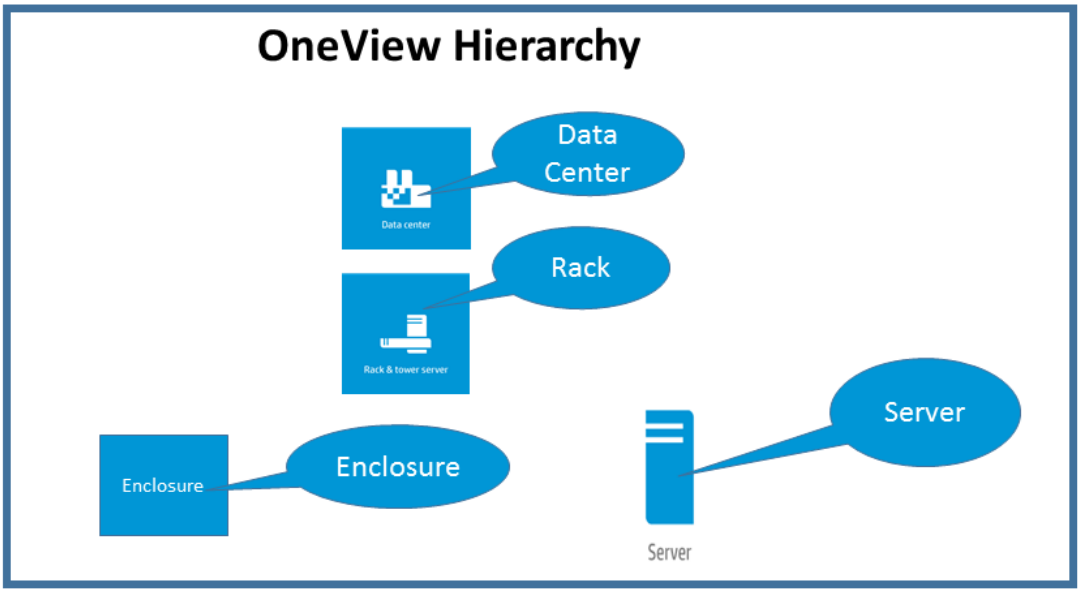
OpsA's integration with OneView provides IT professionals a summary of the converged infrastructure devices being managed by OneView. With this integration, OpsA becomes the troubleshooting, analytic, and capacity planning arm of OneView. The OpsA - OneView integration provides summary information for the infrastructure devices as well as doing analytics on the management data from OneView, including logs, metrics, OneView alerts, and topology data.

Learn About

About the OpsA - OneView integration.

To configure the OpsA - OneView integration, see the *Operations Analytics - OneView Integration Guide*.

OneView organizes your system environment according to the following hierarchy :



1. **Data Center**: A collection of racks and servers.
2. **Rack**: A cabinet that contains enclosures and servers.

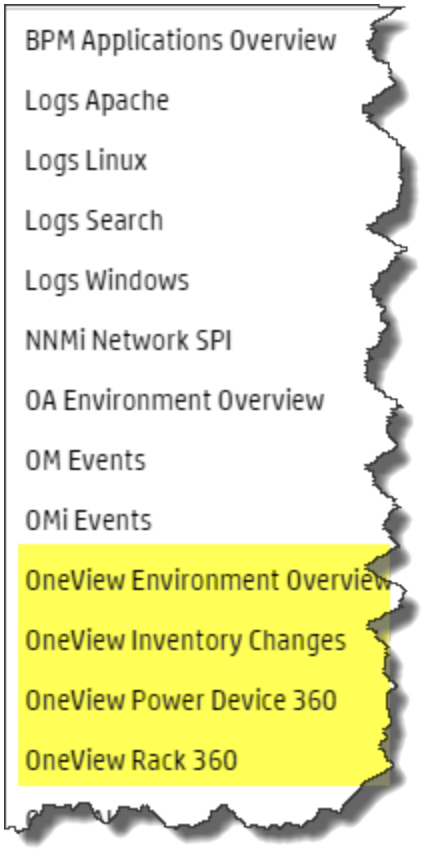
3. **Enclosure**: An enclosure is a physical structure that can contain server blades, infrastructure hardware, and interconnects. An enclosure also includes bays for the following equipment:
   - servers
   - disk arrays
   - cpu blades
   - switches (interconnects) for network virtual connect
   - chassis elements
   - power supplies
   - fans
4. **Server**: Any single computer that is a standalone server, rack mounted, or a blade. It is monitored by HP's Integrated Lights-Out (iLO) technology.

Consider the following definitions to better understand the OneView feature:

1. Device bays: A slot in an enclosure supplying power and network connectivity to the blade.
2. Blade: A server, disk array, or a set of CPUs.
3. Interconnects: A set of switches that provides network connectivity in a virtual fashion such that the IP and MAC addresses can be moved between two blades (for failover purposes). These switches are monitored by the virtual connect (VC) device.
4. Server profile: A configuration that you can apply to any server being managed by OneView.
5. Enclosure Groups: A logical collection of enclosures.

Navigating with OneView Dashboards

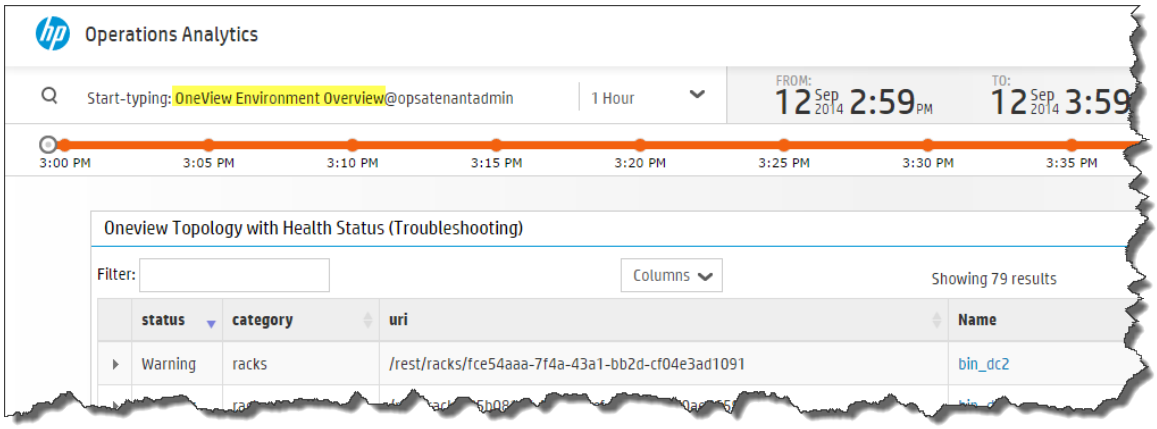
OneView Dashboards: To open any of the four main dashboards focused on data collected from the OpsA - OneView integration, select one of the following highlighted menu items from the OpsA console:

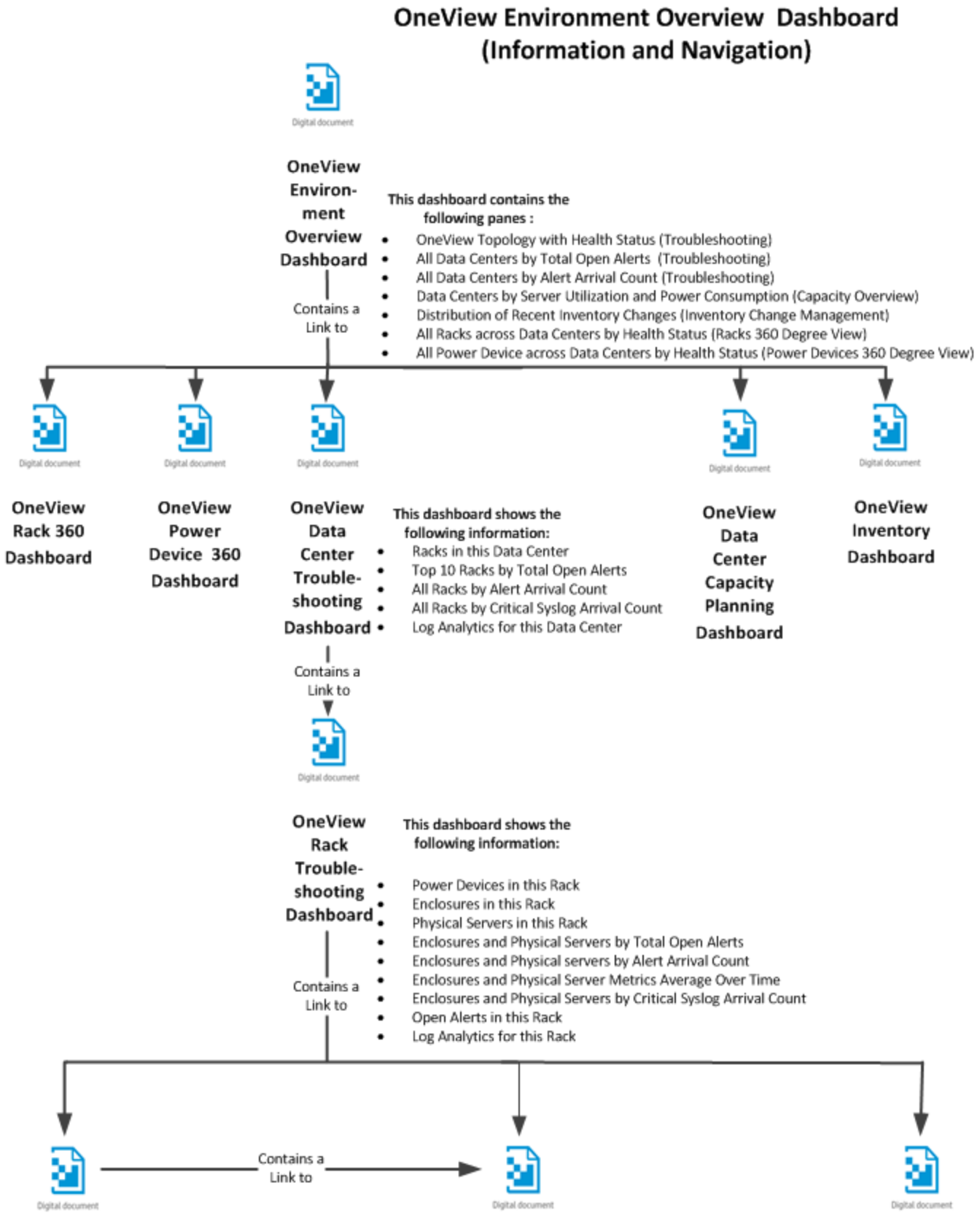


After Selecting one of these dashboards, review the information that follows to see what information you can obtain from the dashboards provided by the OpsA - OneView integration and how to navigate among the various dashboards to troubleshoot and plan for the future capacity needs for your infrastructure.

Workflow for the OneView Environment Overview dashboard:

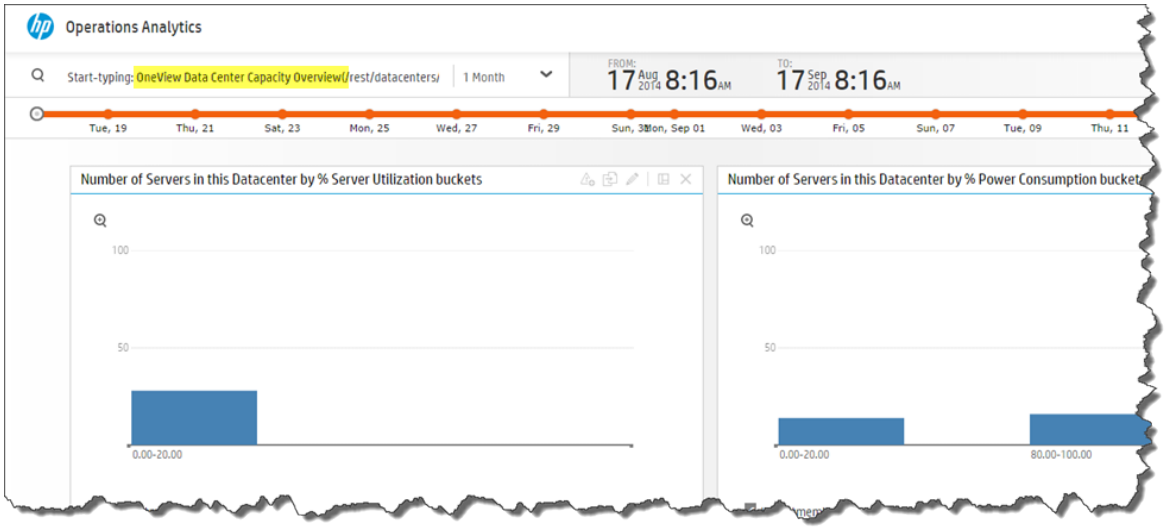
The following graphic shows you the OneView Environment Overview dashboard. This dashboard shows summarized management information for all the data centers currently being managed by OneView. Use this dashboard as the starting point for troubleshooting your infrastructure.

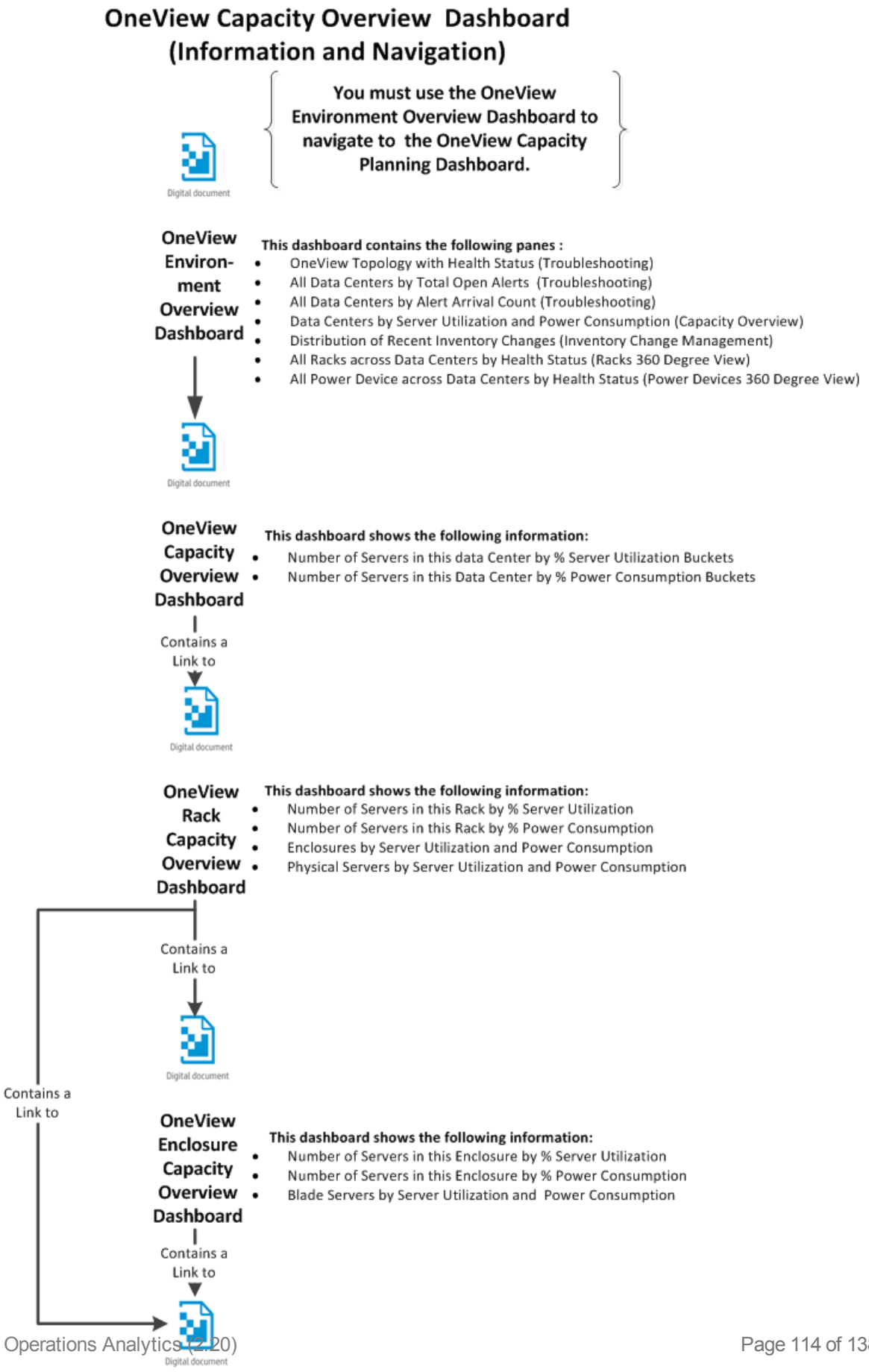



OneView Environment Overview Dashboard (Information and Navigation)
OneView Environ-ment Overview Dashboard
This dashboard contains the following panes :
OneView Topology with Health Status (Troubleshooting)
All Data Centers by Total Open Alerts (Troubleshooting)
All Data Centers by Alert Arrival Count (Troubleshooting)
Data Centers by Server Utilization and Power Consumption (Capacity Overview)
Distribution of Recent Inventory Changes (Inventory Change Management)
All Racks across Data Centers by Health Status (Racks 360 Degree View)
All Power Device across Data Centers by Health Status (Power Devices 360 Degree View)
Contains a Link to
OneView Rack 360 Dashboard
OneView Power Device 360 Dashboard
OneView Data Center Trouble-shooting Dashboard
This dashboard shows the following information:
Racks in this Data Center
Top 10 Racks by Total Open Alerts
All Racks by Alert Arrival Count
All Racks by Critical Syslog Arrival Count
Log Analytics for this Data Center
OneView Data Center Capacity Planning Dashboard
OneView Inventory Dashboard
Contains a Link to
OneView Rack Trouble-shooting Dashboard
This dashboard shows the following information:
Power Devices in this Rack
Enclosures in this Rack
Physical Servers in this Rack
Enclosures and Physical Servers by Total Open Alerts
Enclosures and Physical servers by Alert Arrival Count
Enclosures and Physical Server Metrics Average Over Time
Enclosures and Physical Servers by Critical Syslog Arrival Count
Open Alerts in this Rack
Log Analytics for this Rack
Contains a Link to
Contains a Link to
OneView Enclosure Trouble-shooting Dashboard
This dashboard shows the following information:
Blade Servers in this Enclosure
Interconnects in this Enclosure
Top 10 Blade Servers by Total Open Alert Count
All Interconnects by Total Open Alert Count
OneView Server Trouble-shooting Dashboard
This dashboard shows the following information:
Server Metrics
Open Server Alerts by Health Category
Open Server Alerts by Alert Type
Alert Arrival over Time
OneView Power Device Trouble-shooting

Workflow for the OneView Capacity Overview dashboard:

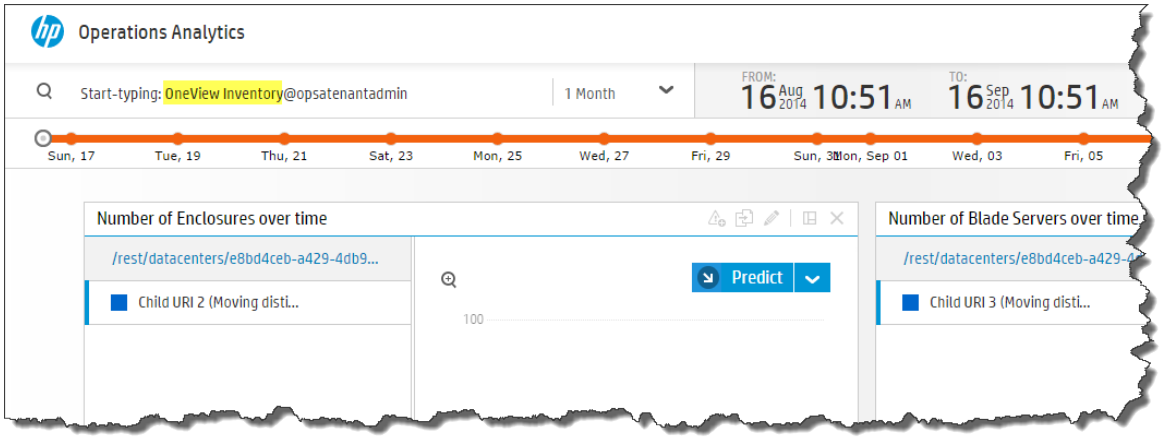
The following graphic shows you the OneView Capacity Overview dashboard.

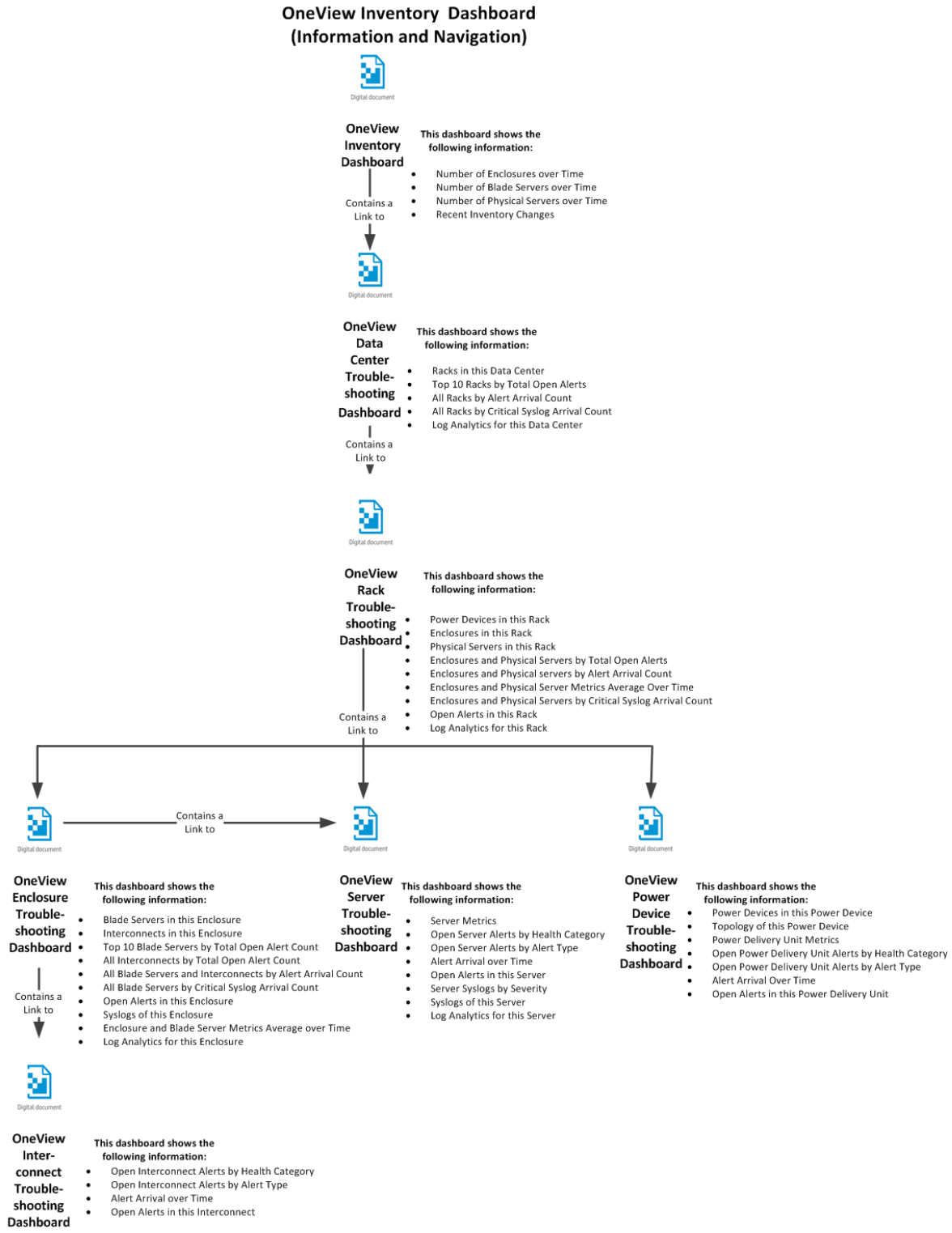



OneView Capacity Overview Dashboard
(Information and Navigation)
You must use the OneView Environment Overview Dashboard to navigate to the OneView Capacity Planning Dashboard.
Digital document
OneView Environ-ment Overview Dashboard
This dashboard contains the following panes :
OneView Topology with Health Status (Troubleshooting)
All Data Centers by Total Open Alerts (Troubleshooting)
All Data Centers by Alert Arrival Count (Troubleshooting)
Data Centers by Server Utilization and Power Consumption (Capacity Overview)
Distribution of Recent Inventory Changes (Inventory Change Management)
All Racks across Data Centers by Health Status (Racks 360 Degree View)
All Power Device across Data Centers by Health Status (Power Devices 360 Degree View)
Digital document
OneView Capacity Overview Dashboard
This dashboard shows the following information:
Number of Servers in this data Center by % Server Utilization Buckets
Number of Servers in this Data Center by % Power Consumption Buckets
Contains a Link to
Digital document
OneView Rack Capacity Overview Dashboard
This dashboard shows the following information:
Number of Servers in this Rack by % Server Utilization
Number of Servers in this Rack by % Power Consumption
Enclosures by Server Utilization and Power Consumption
Physical Servers by Server Utilization and Power Consumption
Contains a Link to
Digital document
Contains a Link to
OneView Enclosure Capacity Overview Dashboard
This dashboard shows the following information:
Number of Servers in this Enclosure by % Server Utilization
Number of Servers in this Enclosure by % Power Consumption
Blade Servers by Server Utilization and Power Consumption
Contains a Link to
Digital document

Workflow for the OneView Inventory dashboard:

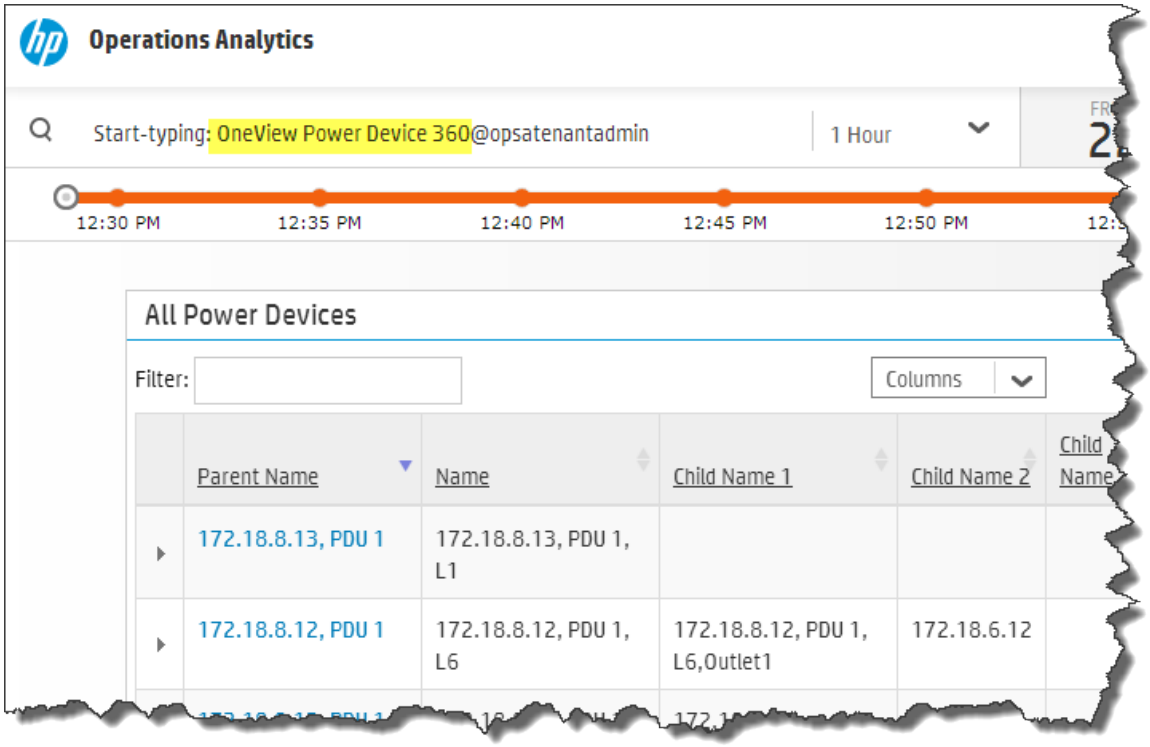
The following graphic shows you the OneView Inventory dashboard.

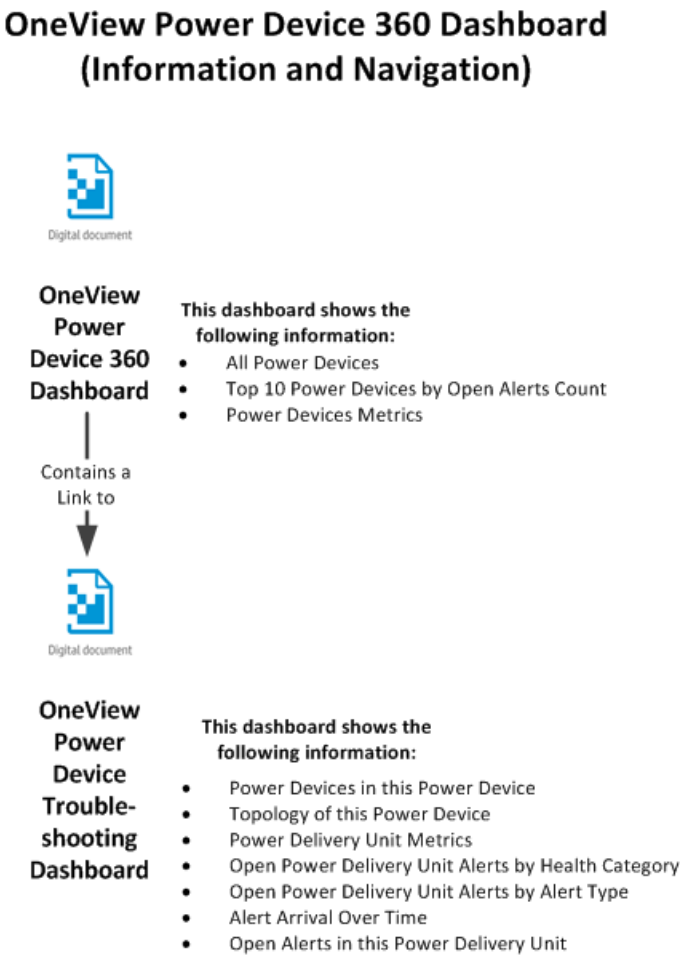



OneView Inventory Dashboard (Information and Navigation)
Digital document
OneView Inventory Dashboard
Contains a Link to
This dashboard shows the following information:
Number of Enclosures over Time
Number of Blade Servers over Time
Number of Physical Servers over Time
Recent Inventory Changes
Digital document
OneView Data Center Trouble-shooting Dashboard
Contains a Link to
This dashboard shows the following information:
Racks in this Data Center
Top 10 Racks by Total Open Alerts
All Racks by Alert Arrival Count
All Racks by Critical Syslog Arrival Count
Log Analytics for this Data Center
Digital document
OneView Rack Trouble-shooting Dashboard
Contains a Link to
This dashboard shows the following information:
Power Devices in this Rack
Enclosures in this Rack
Physical Servers in this Rack
Enclosures and Physical Servers by Total Open Alerts
Enclosures and Physical servers by Alert Arrival Count
Enclosures and Physical Server Metrics Average Over Time
Enclosures and Physical Servers by Critical Syslog Arrival Count
Open Alerts in this Rack
Log Analytics for this Rack
Digital document
Contains a Link to
Digital document
Digital document
OneView Enclosure Trouble-shooting Dashboard
Contains a Link to
This dashboard shows the following information:
Blade Servers in this Enclosure
Interconnects in this Enclosure
Top 10 Blade Servers by Total Open Alert Count
All Interconnects by Total Open Alert Count
All Blade Servers and Interconnects by Alert Arrival Count
All Blade Servers by Critical Syslog Arrival Count
Open Alerts in this Enclosure
Syslogs of this Enclosure
Enclosure and Blade Server Metrics Average over Time
Log Analytics for this Enclosure
Digital document
OneView Server Trouble-shooting Dashboard
This dashboard shows the following information:
Server Metrics
Open Server Alerts by Health Category
Open Server Alerts by Alert Type
Alert Arrival over Time
Open Alerts in this Server
Server Syslogs by Severity
Syslogs of this Server
Log Analytics for this Server
OneView Power Device Trouble-shooting Dashboard
This dashboard shows the following information:
Power Devices in this Power Device
Topology of this Power Device
Power Delivery Unit Metrics
Open Power Delivery Unit Alerts by Health Category
Open Power Delivery Unit Alerts by Alert Type
Alert Arrival Over Time
Open Alerts in this Power Delivery Unit
OneView Inter-connect Trouble-shooting Dashboard
This dashboard shows the following information:
Open Interconnect Alerts by Health Category
Open Interconnect Alerts by Alert Type
Alert Arrival over Time
Open Alerts in this Interconnect

Workflow for the OneView Power Device 360 dashboard:

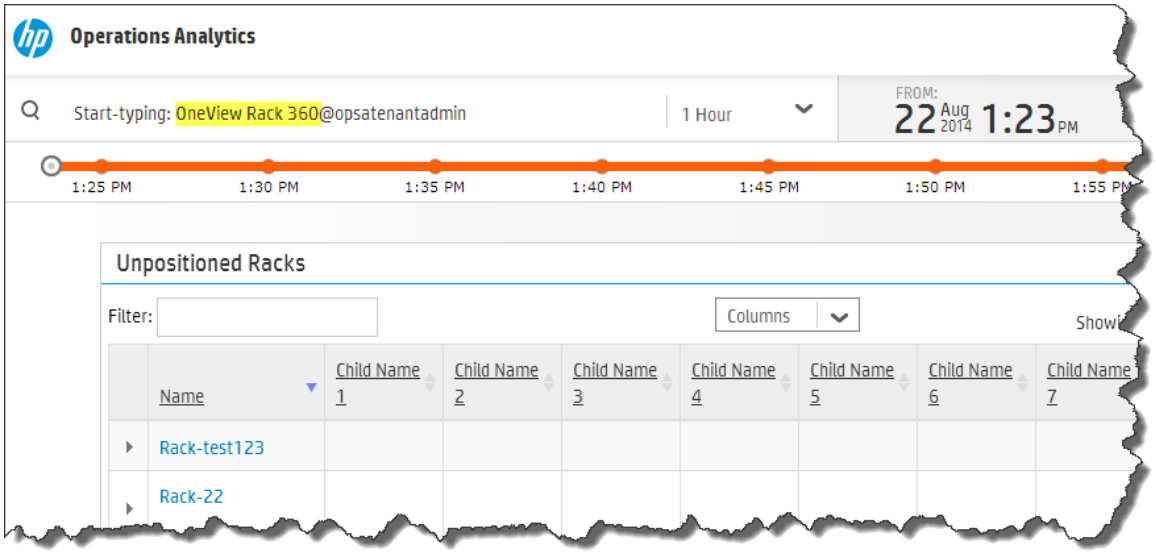
The following graphic shows you the OneView Power Device 360 dashboard.

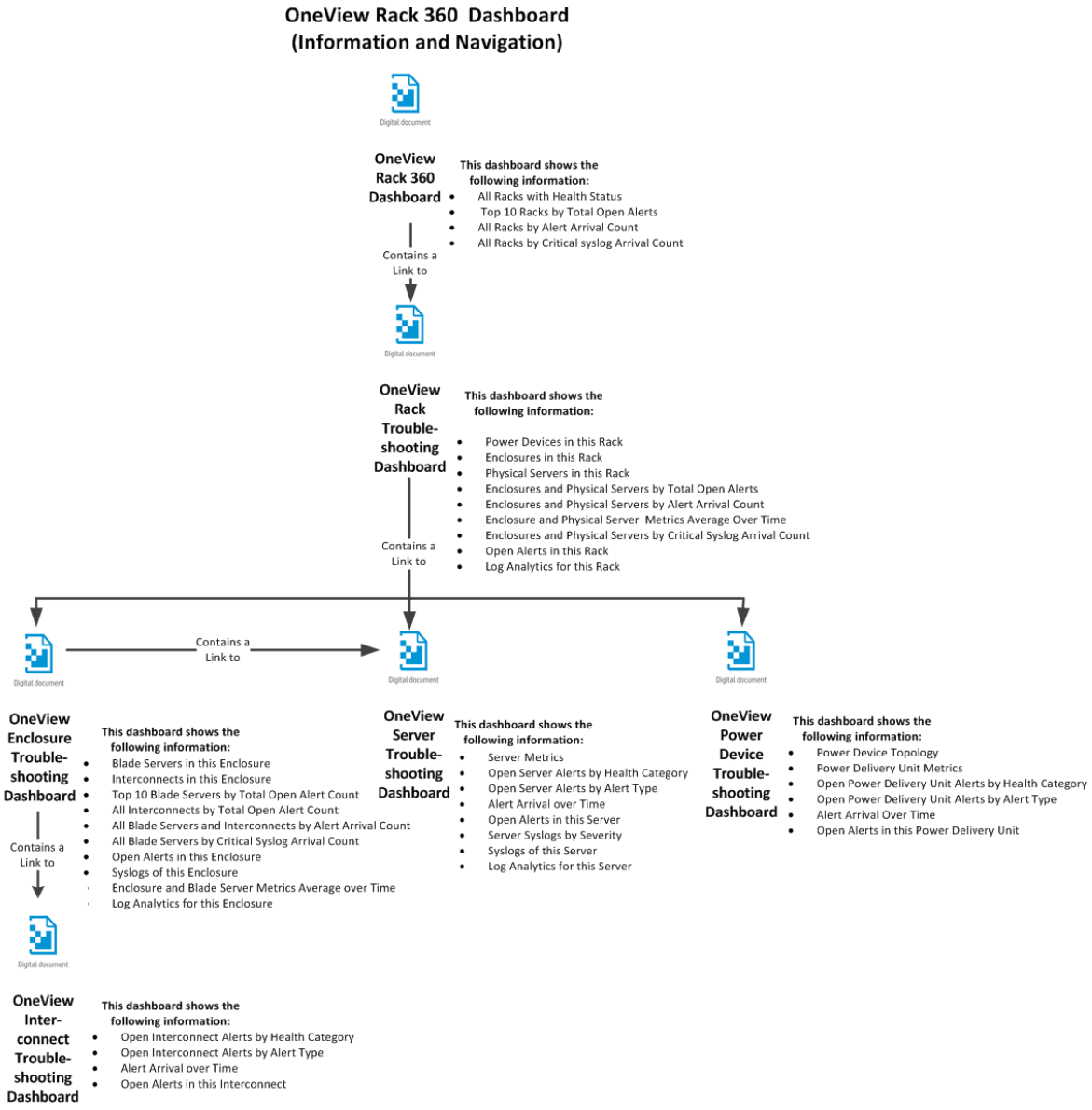




Workflow for the OneView Rack 360 dashboard:

The following graphic shows you the OneView Rack 360 dashboard.





Using the Phased Query Language with OneView

With the OpsA - OneView integration, you have some additional PQL search query options.

The PQL search query now supports three additional search tags:

- **enclosure**: Use this tag to search for specific enclosures.
- **server_hardware**: Use this tag to search for physical servers and blade servers within enclosures.
- **power_device**: Use this tag to search for power devices.

When you start a PQL search query by typing any of the tags shown above, the search bar suggests the applicable entity instances using the **withkey** string . For example,if you start typing `enclosure`,

OpsA shows you suggestions such as : `enclosure withkey <enclosure name> <IP address>`. Similarly for the `server_hardware` and `power_device` tags, OpsA shows you applicable suggestions.

These PQL suggestions are tied to your OneView environment, as the entity instances being suggested come directly from the database in which this management data or inventory data exists. As discussed earlier, the management data for OneView are alerts, syslogs and metrics. After you select a suggestion from the list of suggestions, the PQL dynamically generates a dashboard for the selected entity with the panes showing the OneViewmanagement data.

The dashboards from the PQL search queries contain panes of information similar to the following:

- A metrics line chart showing the applicable metrics of the selected entity (applicable for enclosures, server hardware and power devices).
- A pie chart showing enclosure syslogs by severity (applicable for enclosures and server hardware).
- A table showing enclosure syslogs (applicable for enclosures and server hardware).
- A list of enclosure alerts by health category (applicable for enclosures, server hardware, and power devices).
- A table of enclosure alerts (applicable for enclosures, server hardware, and power devices).

OpsA information panes appear in the generated dashboard only when there is data available in the database for those panes.

Metric panes contain links to the corresponding troubleshooting dashboards for a given entity. For example, if a PQL search query shows a metric pane for several power devices, it will contain a link to the power device troubleshooting dashboard for those power devices.

Tasks

Troubleshooting with OneView Dashboards

After configuring the HP OpsA - HP OneView integration, OpsA provides the dashboards described in this section to use when troubleshooting with OneView.

- **OneView Environment Overview Dashboard**: This dashboard shows summarized management information for all the data centers currently being managed by OneView. Use this dashboard as the starting point for troubleshooting your infrastructure. From here, select a data center and navigate to the OneView Data Center Troubleshooting dashboard to continue troubleshooting.
- **OneView Data Center Troubleshooting Dashboard**: This dashboard shows a 360 degree view of the selected data center, showing all of the racks residing in the data center. From here, select a rack to go to the **OneView Rack Troubleshooting** dashboard.
- **OneView Rack Troubleshooting Dashboard**: From the **OneView Rack Troubleshooting** dashboard you can view the various aspects of the rack and select an enclosure to go to the **OneView Enclosure Troubleshooting** dashboard or select a physical server to go to the **OneView Server Troubleshooting** dashboard.

- **OneView Enclosure Troubleshooting Dashboard**: From the **OneView Enclosure Troubleshooting** dashboard, you can view the various aspects of the enclosure and select a blade server to open the **OneView Server Troubleshooting** dashboard for the selected blade. From the **OneView Enclosure Troubleshooting** dashboard you can also select an interconnect to go to the **OneView Interconnect Troubleshooting** dashboard.
- **OneView Server Troubleshooting Dashboard**: Use this dashboard to troubleshoot a blade server or a physical server.
- **OneView Interconnect Troubleshooting Dashboard**: Use this dashboard to troubleshoot the selected interconnect.
- **Start-Typing bar**: As a shortcut, use OpsA's **Start-typing** bar to search for a Oneview managed entity and quickly open its troubleshooting or analytics page.

Chapter 14: Manage Users and Tenants

This topic defines user accounts, user groups, and tenants and contains the procedures required to work with them.

To access

Click **Settings** and select **User Management**.

Learn About

About User Accounts

As an Operations Analytics administrator, you must configure a User Account for each user who needs to access the Operations Analytics graphical user interface.

Note the following:

- User Accounts must be unique across all Tenants.

  Tip: To ensure the user name is globally unique, enter a user's email address as the user name.

- Each User Account must be assigned to a User Group.

To create a user account, see "Add a User Account" on page 125, **opsa-tenant-manager.sh** (available from help > reference pages), and "Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide .

The first time you log on, you will need to change the default password. Follow the password guidelines shown in the **Change Password** dialog box.

After ten failed attempts to access Operations Analytics from a specific user account, Operations Analytics denies access to users attempting access with this user account. This account restriction lasts for ten minutes. If you have any Operations Analytics access problems, discuss them with your Operations Analytics administrator.

About User Groups

User Groups are pre-defined in Operations Analytics and determine which tasks each User Account that is assigned to the User Group can perform.

Note:

- User Accounts must be unique across all tenants.
- All User Groups have access to the Operations Analytics graphical user interface.
- You cannot add a new User Group to Operations Analytics.
- A User Account was assigned to the **Super Admin** User Group when Operations Analytics was installed.
- See **opsa-tenant-manager.sh** (available from help > reference pages) and "Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guidefor information about assigning a user to a User Group.

Pre-defined User Groups

User Group	Description	Supported Tasks
Super Admin	**Note:** Operations Analytics permits only one Super Admin user. The user account assigned to this user group has access to the following information for each tenant defined: • User Accounts • User Groups	Add, modify, and delete tenants. Add, modify, and delete user accounts assigned to the Tenant Admin user group.
Tenant Admin	User accounts assigned to this User Group have access to the following information only for the tenant to which they are assigned: • Collectors • Collections • Meta Data • Tags • User Accounts • User Groups	Add, modify, and delete user accounts. Manage the collectors, collections, meta data, and tags for a specified tenant.

Pre-defined User Groups, continued

User Group	Description	Supported Tasks
User	User accounts assigned to this User Group have access to the Operations Analytics graphical user interface and to only the meta data and data for the tenant to which they are assigned.	Access and perform tasks using the Operations Analytics Dashboards. **Note:** Users assigned to this user group can also add and delete tags from a collection. See **opsa-tag-manager.sh** (available from help > reference pages) and "Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide for more information.

New users are automatically assigned to a predefined user group. The user group to which a new user is assigned depends on the user group to which you are assigned when adding a new user.

User Groups Assigned to New Users

Your User Group	User Group Automatically Assigned to the New User
Super Admin	Tenant Admin
Tenant Admin	User

About Tenants

Operations Analytics supports multi-tenancy. This means one instance of Operations Analytics can serve multiple customers. Tenants ensure isolation of meta data and data across customers. The meta data includes the following:

- Collections
- Database schema
- Tags
- Dashboards
- User Accounts

For example, if you are a Manage Service Provider or Software as a Service Provider with multiple customers, tenants enable you to ensure that each customer accesses only the data for its data center or network.

When you install Operations Analytics, by default Operations Analytics creates the **opsa_default** tenant.

To create one or more tenants, see **opsa-tenant-manager.sh** (available from help > reference pages) and "Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide .

Tasks

Add a User Account

1. Click **Settings** and select **Users Manager**.

   Operations Analytics displays the **Users Manager** form.

   Note: You must belong to either the Super Admin or Tenant Admin User Group to access the **Users Manager** option.

2. Click Add User .

   Operations Analytics displays the **Add User** form. Follow the password guidelines shown in the **Add User** dialog box.

3. If you belong to the Super Admin User Group, in the **Tenant** attribute, do one of the following:

   a. Select a tenant name to which you want to assign the user account.

   b. Enter the name of a tenant you want to create. Click **No matches found - Click to Add** . In the **Add Tenant** dialog, click **OK.**

      The new user is assigned to this tenant.

4. In the **User Name** attribute, enter the user account name.

   Tip: If you are using Public Key Infrastructure (PKI) authentication, the user name must be an email address.

5. Finish entering your passwords, then click **Save**.

   Operations Analytics lists the new user account in the **Users Manager** table with its associated user group and tenant.

   See the opsa-user-manager.sh reference page (or the Linux manpage) for more information.

You can also add a user account using the opsa-user-manager.sh script. Run the following command: $OPSA_HOME/bin/opsa-user-manager.sh -add -loginUser <*Super Admin or Tenant Admin User Name*> -loginPassword <*password*> -newUser <*new username*> -newUserPassword <*new user password*>

Note: See the opsa-user-manager.sh reference page (or the Linux manpage) for more information.

After creating a new user use the opsa-user-manager.sh script, to show a list of users run the commands shown in the following examples:

- **To list Tenant Admin users**: $OPSA_HOME/bin/opsa-user-manager.sh -list -loginUser opsaadmin -loginPassword <*opsaadmin password*>
- **To list users by Tenant**: $OPSA_HOME/bin/opsa-user-manager.sh -list -loginUser <*Tenant Admin User*> -loginPassword <*Tenant Admin Password*>

You can delete a user account using the opsa-user-manager.sh script. Run the following command: $OPSA_HOME/bin/opsa-user-manager.sh -delete -loginUser <*Tenant Admin User*> -loginPassword <*Tenant Admin Password*> -user <*username*>

Change Your User Account Password

You can change your user account password at any time.

To change your user account password:

1. In the upper right corner of the Operations Analytics console, click your user account name.
2. Select **Change Password**.

   The **Change Password** dialog box appears. Follow the password guidelines shown in the **Change Password** dialog box and change your password.
3. Click **Update** after you finish to save your changes.

You can also modify the password for a user account using the opsa-user-manager.sh script. Run the following command:
$OPSA_HOME/bin/opsa-user-manager.sh -modify -loginUser <*username*> -loginPassword <password> -newUserPassword <*new user password*>

Note:

- Run the opsa-user-manager.sh command as an opsa user, not as a root user. Running opsa-user-manager.sh as a root user is not supported.
- See the opsa-user-manager.sh reference page (or the Linux manpage) for more information.

Add a Tenant

As an Operations Analytics administrator, if you belong to the **Super Admin** User Group, you can add one or more tenants.

Note:

- You can also use **opsa-tenant-manager.sh** (available from help > reference pages) to add tenants to Operations Analytics.
- If you do not configure one or more tenants, Operations Analytics stores all of the meta data, collection and query information in the **opsa_default** tenant.
- User account names must be unique across all tenants.

To add a tenant:

1. Click **Settings** and select **Users Manager**.

   Operations Analytics displays the **Users Manager** form.

   Note: You must belong to either the Super Admin or Tenant Admin User Group to access the **User Management** option.

2. Click Add User .

   Operations Analytics displays the **Add User** form.

3. If you belong to the Super Admin User Group, in the **Tenant** attribute, enter the name of a tenant you want to create. Tenant names cannot begin with a number. The initial alpha character can be followed by alphanumeric characters (including an underscore).

   Note: OpsA converts all tenant names to lowercase.

4. Click **No matches found - Click to Add** .
5. In the **Add Tenant** dialog, click **OK.**

Chapter 15: About the Analytics Query Language (AQL)

Use the Analytics Query Language (AQL) when the Phrased Query Language (PQL) syntax is not specific enough to return the data you need. When using AQL you can be more specific about the data collected. You can also filter, group, and order the collected data in a single query.

AQL queries use a syntax similar to the ANSI Standard SQL. When using AQL, it is helpful if you have minimal knowledge of databases as well as scripting or programming skills. However, it is not mandatory to have this knowledge to get started using AQL queries.

Tip: Before you begin writing AQL queries, view the collection information that is stored in Operations Analytics to determine the kinds of data available in your environment. You will use this information as part of your AQL syntax. For details, see "How to View Collection Information" on page 64.

Note the following:

- When building AQL queries, you can also define AQL functions or expressions.
- AQL functions are a convenient way of defining and naming frequently used AQL queries for reuse. When you define the function, you define the associated AQL query as well as the argument values to pass to that AQL query. See the AQL Developer Guide for more information.

Chapter 16: Administrator Tasks

As an Operations Analytics administrator, you perform the tasks described in the table below to enable Operations Analytics users to proactively manage and troubleshoot IT operations problems.

For example, after you have initially installed and configured Operations Analytics, you might find that you want to use additional data sources and configure the associated collections.

Administrator Tasks

Category	Task	Location in Documentation	Command
Maintain Collections and Collectors	Plan for each new data source and subsequent collection configuration.	"Planning Your Deployment" in the HP Operations Analytics Installation Guide.	
	In multiple Operations Analytics server environments only. Designate the Operations Analytics server from which to configure all collections.	"Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide.	
	Create the collection template for each additional collection.	"Adding a New HP Operations Analytics Collection" in the HP Operations Analytics Configuration Guide.	**opsa-collection-config.sh** (available from help > reference pages)
	Configure your collection templates to match your IT environment.	"Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide.	**opsa-collection-config.sh** (available from help > reference pages)
	Optional. Add one or more tenants	"Add a Tenant" on page 126 "Creating a Tenant" in the HP Operations Analytics Configuration Guide.	**opsa-tenant-manager.sh** (available from help > reference pages)
	Optional. Delete one or more tenants. **Note:** Be sure to remove a collection registration for any tenant that will be removed.	"Deleting a Tenant" and "Remove a Collection Registration for a Tenant" in the HP Operations Analytics Configuration Guide.	**opsa-tenant-manager.sh** (available from help > reference pages)

Administrator Tasks , continued

Category	Task	Location in Documentation	Command
	Optional. Associate each collection with a tenant. **Note:** You must first create the tenant to which you want to associate a collection.	"Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide.	**opsa-tenant-manager.sh** (available from help > reference pages)
	Optional. For each tenant, create a user account for the **Tenant Admin** and **User** User Groups.	"Manage Users and Tenants" on page 122 "Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide.	**opsa-tenant-manager.sh** (available from help > reference pages)
	Configure a collector for each new collection.	"Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide.	**opsa-collection-config.sh** (available from help > reference pages)
	Configure additional collectors for one or more existing collections.	"Installing and Configuring the Operations Analytics Collector Appliance using the VMware vSphere Client" in the HP Operations Analytics Installation Guide and "Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide.	**opsa-collection-config.sh** (available from help > reference pages)
	Back up your collection configuration on the Operations Analytics server. The collection configuration directory is: `/opt/HP/opsa/conf/collection`	"Configuring Tenants and Collections" in the HP Operations Analytics Configuration Guide.	
	Troubleshoot collection problems	"Troubleshooting Operations Analytics Collections" in the HP Operations Analytics Configuration Guide.	

Administrator Tasks , continued

Category	Task	Location in Documentation	Command
Define a Service	Communicate collection names and meta data information to your users.	See "Communicating Collection Names and Meta Data Information to your Users" in the HP Operations Analytics Configuration Guide.	
	Set collection retention periods.	See "Setting Collection Retention Periods" in the HP Operations Analytics Configuration Guide.	
	View the collection information stored in Operations Analytics.	"How to View Collection Information" on page 64	
	Topology Manager enables you to group together hosts that are of interest to you, and view them in Operations Analytics as a **service**. You can group hosts together based on their function, their location, or any other grouping that is meaningful to you when organizing your services.	"Topology Manager" on page 53	
Create AQL Functions	*Optional*. Write Analytic Query Language (AQL) functions using a text editor.	AQL Developer Guide	
Import AQL Functions	*Optional.* Import your AQL functions.	AQL Developer Guide	**opsa-aql-module-manager.sh** (available from help > reference pages)
Maintain User Accounts	Add, modify, or delete one or more user accounts.	"Manage Users and Tenants" on page 122 "Maintaining User Accounts" in the HP Operations Analytics Configuration Guide.	

Administrator Tasks , continued

Category	Task	Location in Documentation	Command
Maintain HP Operations Analytics	Check the system health of Operations Analytics.	"Check the Health of Operations Analytics" below "Checking Operations Analytics System Health" in the HP Operations Analytics Configuration Guide.	
	Back up the Operations Analytics database.	"Maintaining the HP Operations Analytics Database" in the HP Operations Analytics Configuration Guide.	
	View license information.	Access Help and About Information from the help menu.	

Check the Health of Operations Analytics

Operations Analytics provides two methods for checking the health of servers running the Operations Analytics service:

Command Line Interface

The table below describes the commands used to check the status of Operations Analytics:

Command	Description
opsa-server status	Check the status of the Operations Analytics service **Note:** The opsa-server command must be run on the Operations Analytics server.
opsa-collector status	Checks the status of the collector service on the Collector Appliance. **Note:** The opsa-collector command must be run on the Operations Analytics Collector Appliance.

Command	Description
opsa-loader status	Checks the status of the loader service on the Collector Appliance. **Note:** The opsa-loader command must be run on the Operations Analytics Collector Appliance.

OpsaSystemHealth Dashboard

Use the OpsaSystemHealth dashboard to investigate the health of the Operations Analytics servers. The table below describes the query panes available.

Note: If you view the message that no data is available, this might mean you do not have the required software to collect the expected data. See the **Required Software** column of the table below. Also see "Checking Operations Analytics System Health" in the HP Operations Analytics Configuration Guide for the configuration steps required to display this dashboard information.

Query Pane	Description	Required Software
Host System Metrics over Time	Use this visualization to determine server health for the Operations Analytics servers. Displays the average value over time for the following metrics for each server running the Operations Analytics service: • System up time • CPU utilization	HP Operations Agent
Service Topology	Use this visualization to determine the servers running Operations Analytics software. Displays topology information for the Operations Analytics service, including the following servers: • Operations Analytics server • Operations Analytics collector servers • HP logger servers • HP Vertica database servers Also displays the CPU utilization and system up time for each of the Operations Analytics servers.	Operations Analytics only

Query Pane	Description	Required Software
Collected Metric - Row Counts	Shows a row for the data being collected by each configured collection.	
Configured Collections Dictionary	Shows a table of information that includes collection property information for each collector host.	
Log Messages (100+)	Use this visualization to troubleshoot any Operations Analytics log file error messages. Displays all log file messages for servers running the Operations Analytics service.	Operations Analytics only

Glossary

A

attribute
A descriptor stored in a collection for an entity, such as host_name.

C

category
A folder that is used to organize your AQL modules.

collections
Operations Analytics stores metrics, topology, inventory, log file, and event information in the form of collection tables. Each collection is associated with a database table in which an Operations Analytics Collector stores the data collected.

D

Database schema
Table, column, attribute, and data type information per collection.

K

Knowledge Content
An xml file that configures a predefined dashboard. Each Knowledge Context includes a name, the entities for which the dashboard displays information, phrases to help identify the Knowledge Context, as well as the queries that return the dashabord and any filters to use before the data is returned.

M

metric
Typically a measurement stored in a collection. For example, CPU utilization.

O

outlier
A data point that is outside of the normal range based on the data collected to date.

Q

query pane
Displays the results of an Analytic Query Language (AQL) query, AQL function, or AQL expression. If you use the Phrased Query Language (PQL) in your search, HP Operations Analytics converts the PQL query to one or more AQL queries and subsequent query panes.

R

raw logs
Log files that contain messages as they appear in the log source from which they are collected. These log files must be configured using the log file management software supported by HP Operations Analytics. See the HP Operations Analytics Support Matrix for more information.

raw metrics
Metrics to which an overall aggregate or moving aggregate analytic function is applied.

S

structured log files
Fragments of log file data that are stored as collections in HP Operations Analytics. Structured logs are log files that are configured as collections. These collections are created so that users can perform analytics on the log file contents. For example, you might want to query for all outliers by host name and application for a particular time range.

T

tag

A word or phrase that is associated with a metric, topology, event, or log file attribute that is stored as part of a collection in HP Operational Analytics. These tags can be used in the HP Operational Analtyics search query as synonyms for the attributes stored in HP Operational Analytics collection tables. They are also used to make metrics display names more meaningful. Tags are provided by HP Operational Analytics and can also be defined by the HP Operational Analytics administrator.

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